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U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

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AND

STATE OF MONTANA
DEPARTMENT OF HIGHWAYS
FINAL
ENVIRONMENTAL / SECTION 4 (f) STATEMENT
Administrative Action
FOR

STATE DOCUMENTS

I 15-1 (32) Armstead North & South
I 15-1 (31) Pipe Organ North & South
I 15-1 (36) Pipe Organ North



THIS HIGHWAY IMPROVEMENT IS PROPOSED FOR FUNDING UNDER TITLE 23, U.S.C. THIS STATEMENT FOR THE IMPROVEMENT WAS DEVELOPED IN CONSULTATION WITH THE FEDERAL HIGHWAY ADMINISTRATION AND IS SUBMITTED PURSUANT TO:

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Date 1-13-75 H.J. Anderson, Director
of Highways

By [Signature]
Administrator, Engineering
Division

APPROVED AND ADOPTED BY THE F.H.W.A.

Date _____ By _____
F.H.W.A. REGIONAL
ADMINISTRATOR

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SUMMARY SHEET

I. TYPE OF ACTION

- ☒ Administrative
- ☐ Draft
- ☐ Environmental Statement
- ☒ Combination Environmental/Section 4(f) Statement
- ☐ Legislative
- ☒ Final

II. PROJECT DESCRIPTION

The Armstead North and South, Pipe Organ North and South and the Pipe Organ North projects would begin about 37 miles north of Montana-Idaho state line and extend northerly approximately 19.9 miles on Interstate Route 15 to a point about 6 miles south of Dillon, Montana. Interstate 15 in Montana runs from the Montana-Idaho line on the south to the Montana-Canadian line on the north via Dillon, Butte, Helena, Great Falls and Shelby. These projects propose to add a new pair of southbound lanes parallel to the existing two-lane interstate highway projects. The new southbound roadway would have two 12-foot wide driving lanes, ten foot outside shoulders and four foot inside shoulders. These projects would have full control of access and will include frontage roads, access roads and modifications to existing interchanges, as well as one new interchange.

III. ENVIRONMENTAL IMPACTS

These projects would provide a safe and efficient transportation facility for the traveling public. A minor amount of new right-of-way would be required, but for the most part, these projects would use existing right-of-way. Access to the Interstate would be controlled, but local access would be perpetuated by means of frontage roads, access trails and interchanges. No families would be displaced.

The existing character of the area would not be significantly altered due to these projects except in the area of the Pipe Organ landslide, since the new two-lanes are being added adjacent to the existing highway. The Pipe Organ landslide area would be altered by the excavation of the face of the bluff west of the slide area. Presplit



blasting should help to reduce overbreakage of rock on the face of the bluff. Talus from the base of the bluff would be removed. The rock buttress would also be visible in this area, but this is unavoidable since the buttress is necessary to stabilize the landslide.

River channel changes in this area are necessary to provide room for the four-lane Interstate highway, remove a constriction in the Beaverhead River and protection of the Union Pacific Railway embankment. Some fish and fish food organisms would be affected by the construction. Timing of stream alteration would correspond to dates that would least affect trout reproduction. Procedures to meet pollution control requirements of the Montana Department of Highways Standard Specifications and the Montana State Department of Health and Environmental Sciences would be followed. Special contract provisions have been agreed on which would keep water pollution and its effects to a minimum.

Section 4(f) land is involved at the Clark Canyon Dam Recreation Area.

IV. ALTERNATIVES

One alternative would be to find a new route for this project, but this would entail purchasing a considerable amount of right-of-way that would take large amounts of land out of production. This would be wasteful and uneconomical since there is an existing two-lane interstate highway in the area with right-of-way available.

In the area of the Pipe Organ landslide, consideration was given to an alternate alignment running behind the bluff through the saddle in order to avoid excavation of the bluff and channel changes in the Beaverhead River. But, after an investigation by geologists revealed a soft talc layer in the area, this alternate was judged undesirable because of the risk and expense of the proposed cut.

Another alternate is not to build these projects. This would leave an uncompleted section of 2-lane Interstate on Route 15, with the accompanying hazards. It would also be in non-compliance with the National Highways Defense Act and for these reasons the "no build" alternate is considered unacceptable.



V. SELECTED FEDERAL, STATE AND LOCAL AGENCIES AND OTHER ORGANIZATIONS FROM WHICH
COMMENTS HAVE BEEN REQUESTED

* Indicates agencies from which comments were received.

County Commission
Beaverhead County
Dillon, Montana 59725

U.S. Forest Service
Federal Building
Missoula, Montana

* Rear Admiral J. J. McClelland (mep)
Cmdr. 13th District U.S. Coast Guard
618 2nd Avenue
Seattle, Washington 98104

Office of Civil Defense
Federal Regional Center
Bothell, Washington 98011

Corps of Engineers
Missouri River Division
U.S. Army Engineer Division, Missouri River
P.O. Box 10 (Downtown Station)
Omaha, Nebraska 68101

Department of Health, Education and Welfare
9017 Federal Office Building
19th and Stout Streets
Denver, Colorado 80202

* Montana Department of Natural Resources and Conservation
32 So. Ewing St.
Helena, Montana 59601

Honorable Raymond Lynch
Mayor
City of Dillon
Dillon, Montana 59725

School Board
Dillon, Montana 59725

* Agricultural Stabilization and Conservation Service
P.O. Box 670
Bozeman, Montana 59715

Postmaster
Dillon, Montana 59725

* Director
State Department of Health
Helena, Montana 59601

Department of Housing and Urban Development
Regional Administrator
Federal Office Building
19th and Stout Streets
Denver, Colorado 80202

Department of Planning and Economic Development
Mr. Perry Roys, Executive Director
Capitol Post Office
Helena, Montana 59601

- * Environmental Quality Council
Room 366 Capitol Building
Helena, Montana 59601

Director
Statewide Archaeological Survey
University of Montana
Missoula, Montana 59801

District Engineer
Union Pacific Railroad Company
829 Pittcock Block
Portland, Oregon 97209

Economic Development Administration
Regional Director
Rocky Mountain Regional Office
Suite 505 Title Building
909 17th Street
Denver, Colorado 80202

Governor's Office
Capitol Building
Helena, Montana 59601

- * Environmental Protection Agency
Room 916 Lincoln Tower
1860 Lincoln Street
Denver, Colorado 80203

- * Ass't. Secretary
Program Policy Director
Environmental Project Review
Dept. of the Interior
Washington, D.C. 20240

Office of Emergency Preparedness
Region 8 Office
7200 W. Alameda Avenue
Denver, Colorado 80226

Dept. of Agriculture
Dr. T.C. Byerly
Office of Secretary
Washington, D.C. 20250



Documents Department
Montana State Library
930 East Lyndale
Helena, Montana 59601

Geological Survey
Water Resources Division
Federal Center
Denver, Colorado 80225

Soil Conservation Service
4930 9th Ave. South
Great Falls, Montana 59401

U.S. Geological Survey
Federal Building
Helena, Montana 59601

Federal Water Quality Administration
Room 501-Pittcock Block
Portland, Oregon 97205

* Montana Dept. of Fish and Game
Division of Environment and Information
Sam W. Mitchell Building
Helena, Montana 59601

Council of Natural Resources and Development
Attention: Richard E. Mayer
Sam W. Mitchell Building
Helena, Montana 59601

Montana Aeronautics Commission
P.O. Box 1698
Helena, Montana 59601

VI. DATE DRAFT STATEMENT MADE AVAILABLE TO C.E.Q.

The draft statement was made available to C.E.Q. on July 16, 1973.

FINAL STATEMENT

The following is the Final Environmental/Section 4(f) Statement for projects I-15-1(32)37 Armstead North and South, I-15-1(31)46 Pipe Organ North and South and I-15-1(36)51 Pipe Organ North.

I. PURPOSE

The I-15 Armstead North and South, Pipe Organ North and South and the Pipe Organ North projects are part of the system of Interstate and Defense highways as delineated under the Highway Act of 1956. These projects were originally constructed as two-lane interstate highways in the time period of 1962 through 1965, except for a 1.8 mile segment on the Pipe Organ North project which was not constructed. This segment was not completed due to the Pipe Organ landslide. The purpose of this new project is to complete this portion of the four-lane interstate highway system. The purpose of the Interstate system is to provide a modern highway system to serve the ground transportation needs of the nation as a whole with a safe and efficient facility.

II. DESCRIPTION OF PROJECT

The Armstead North and South, Pipe Organ North and South and the Pipe Organ North projects comprise a continuous segment of 19.9 miles of Interstate highway. These projects would add a new pair of southbound lanes parallel to the existing two-lane projects.

These projects are designed to current Interstate Standards. The two new southbound lanes would each have 12 foot wide driving lanes, 10 foot outside shoulders and 4 foot inside shoulders. Grades would not exceed 4% and curves would be no sharper than 30'.

Traffic Data for these projects is as follows: (ADT=Avg. Daily Traffic; DHV=Design Hourly Volume; D=Direction Distribution; T=Trucks; V=Design Speed)



<u>Armstead N & S</u>			<u>Pipe Organ N&S</u>	<u>Pipe Organ No.</u>
ADT	(1965)	697	786	832
ADT	(1992)	2300	2600	2750
DIV	-----	290	330	350
D	55%-45%		55%-45%	55%-45%
T	19.6%		19.6%	19.6%
V	70 M.P.H.		70 M.P.H.	70 M.P.H.

ARMSTEAD NORTH AND SOUTH

The Armstead North and South project begins about 0.5 mile north of the Red Rock Interchange and extends northerly approximately 8.0 miles to a point about 1.5 miles north of the Clark Canyon Dam. The proposed horizontal separation of roadways varies between 70 feet, 100 feet and 125 feet center to center. There is a separation of vertical alignment with the new southbound lanes lower in elevation than the northbound lanes for about 4.4 miles.

The Horse Prairie Interchange is located adjacent to the Clark Canyon Dam. This interchange would be modified to accommodate the new southbound lanes. The existing separation structure would be lengthened. Two ramps and the access road to the adjacent recreation area would be relocated. Some embankment for the relocated ramps and recreation road would be constructed on top of part of Clark Canyon Dam, but this construction would not disturb the dam.

The Clark Canyon Dam recreation area comprises about 16.3 acres and is used mainly for picnicing, fishing and boating. Although not designed for overnight camping, many pick-up campers and camp trailers utilize it for this purpose.

This site was developed to provide 31 open, wood picnic tables and 18 tables with shelter shades over them. There are 3 men's and women's outdoor toilets, 3 pumps for drinking water and one concrete boat ramp.

A parking area of about 0.72 acre is located near the picnic facilities.

The area is patronized by local, regional and national visitors.

There are 6 campgrounds located around Hap Hawkins Lake, but this area receives the most use.

The Bureau of Reclamation is the controlling agency, but the area is managed by

the Montana Department of Fish and Game.

It has been determined by the Federal and State governments that this recreation area has significance as Section 4(f) land.

A new dozer trail would provide access on the east side from about 1.7 miles south of the Horse Prairie Interchange northerly to the interchange. The existing trail that extends from the Horse Prairie Interchange northerly approximately 1.5 miles on the east of the Interstate, would be upgraded to a 24 foot graveled road.

The prestressed concrete bridges with 42.0 foot roadways are designed at the Red Rock River, the County Road, and the Beaverhead River. At the Horse Prairie Interchange, the 24 foot wide roadway structure is to be extended to accommodate the new two lanes.

Access would be controlled throughout the length of the project, which necessitates the elimination of one at-grade approach. Local traffic would be served by the Horse Prairie Interchange, Red Rock Interchange and new access trail and frontage road. Drainage, irrigation and access facilities have been designed to perpetuate existing drainage, irrigation and local vehicular travel.

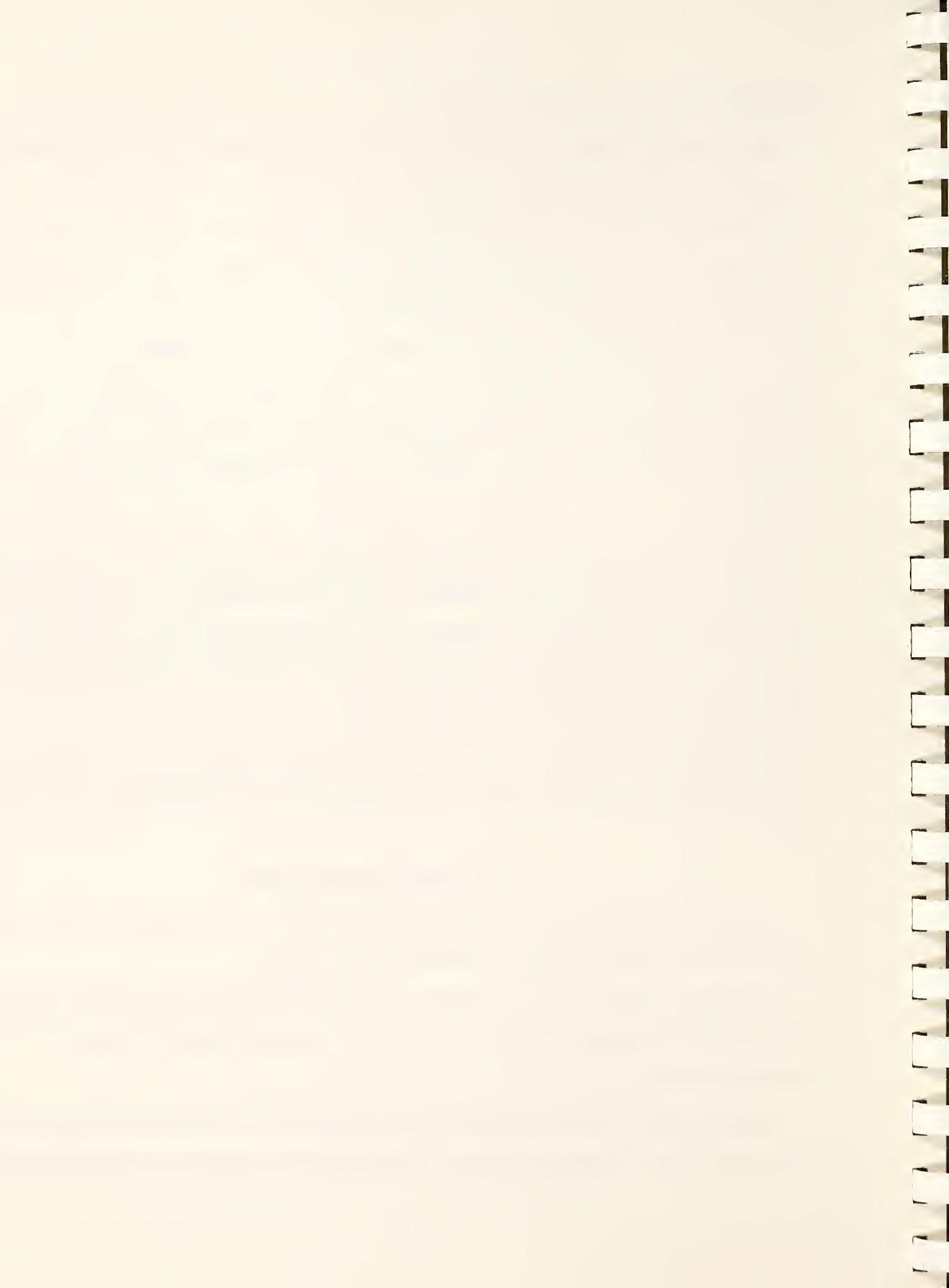
Right-of-way was purchased for the original two-lane construction. There would be a minor amount of additional right-of-way required for the construction of the new two lanes.

PIPE ORGAN NORTH AND SOUTH

The Pipe Organ North and South project begins about 1.5 miles north of the Clark Canyon Dam and extends northerly approximately 5.1 miles.

The horizontal separation of roadways is 70 feet with the new two-lanes parallel to the existing two-lanes. The vertical profile is approximately the same as the existing two-lanes.

A new frontage road would extend from just south of the beginning of this project on the east of the Interstate and then cross under the Interstate and extend northerly



on the east to the end of the project. A new access trail would be provided on the west of the Interstate from Pipe Organ Rock to about 1000' north of the end of this project. Access would be controlled throughout the length of the project which necessitates the elimination of four at-grade approaches. Local access would be perpetuated by the frontage road and access trail which by means of other frontage roads, would connect to the Horse Prairie Interchange to the south and the Grasshopper Creek Interchange to the north. The existing vehicular underpass pipe at Henneberry Gulch will be replaced with a bridge type structure to accommodate large stock trucks.

Drainage and irrigation facilities have been designed to perpetuate the existing drainage and irrigation patterns. New prestressed concrete bridges would be located at the two Beaverhead River crossings on this project.

A boat ramp for small recreation boats would be provided in the Beaverhead River bank near the Pipe Organ Rock as was suggested by the Montana Department of Fish and Game.

Right-of-way was purchased for the original two-lane construction. There would be a minor amount of additional right-of-way required for the construction of the additional two lanes.

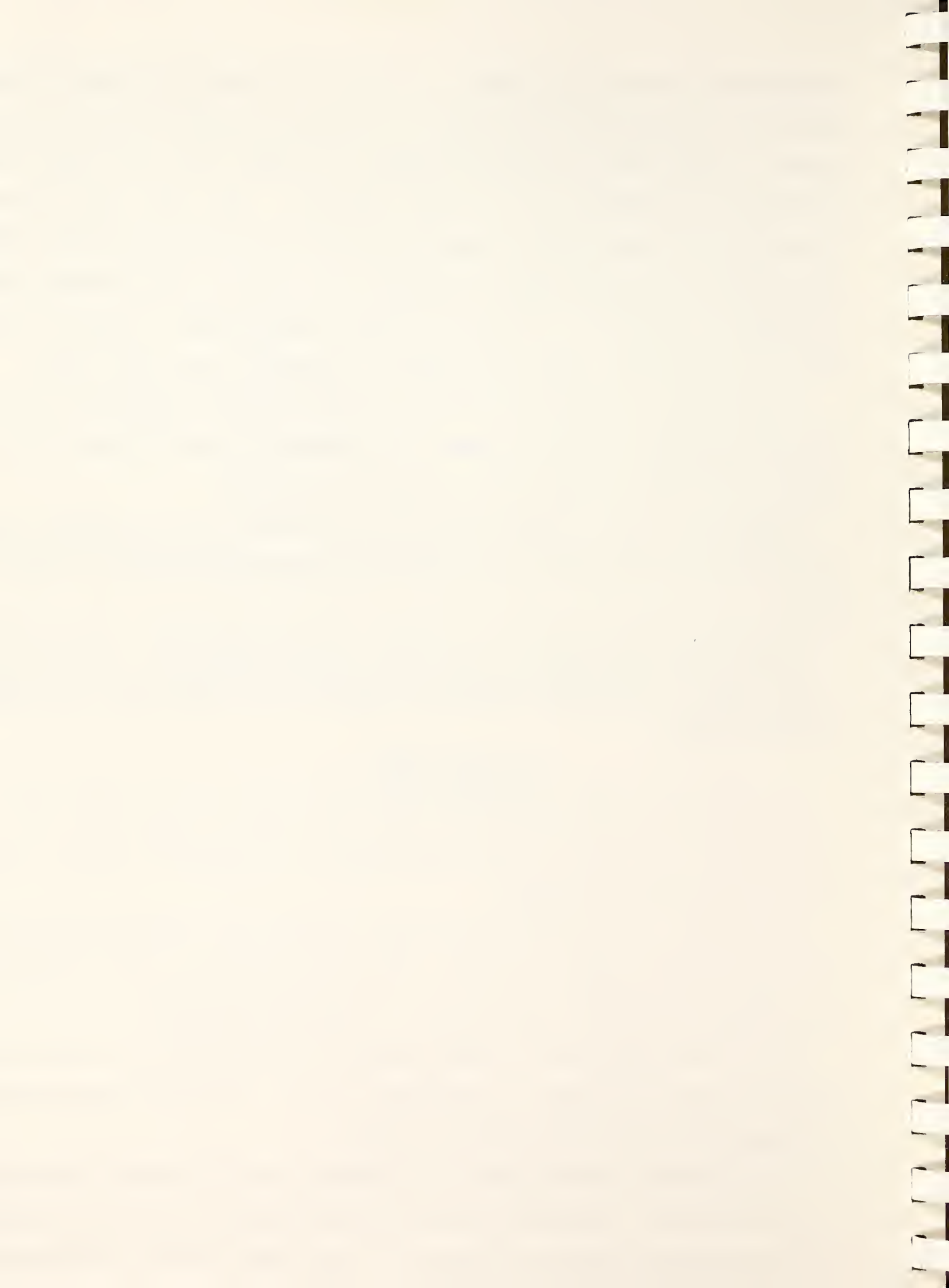
PIPE ORGAN NORTH

The proposed Pipe Organ North project would begin about 6.6 miles north of the Clark Canyon Dam and extend northerly approximately 6.8 miles which is about 1.8 miles north of the Barretts Interchange.

This would be a two-lane add project except for about a 1.8 section which would be a new four-lane roadway construction. This project would also involve construction of a buttress and keyway to help stabilize the Pipe Organ landslide.

The horizontal separation of roadways would be 70 feet except for a 2.1 mile section which would have a separation of approximately 60 feet. The vertical profile would be approximately the same as the existing two-lanes.

A new Interchange will be located near Grasshopper Creek and labeled, "Grasshopper Creek Interchange." The existing Barretts Interchange would be modified to accommodate the new southbound lanes with the addition of a new bridge structure and realignment



of portions of two ramps. The ramps of the existing rest area serving the southbound traffic would be modified to conform to the addition of the new southbound lanes, but all other facilities within this rest area would be unaffected by this project.

A new frontage road would extend from the beginning of the project on the east of the Interstate to the Grasshopper Creek Interchange. A new access trail on the left would extend from about 1000' north of this project's beginning where it will pass through a vehicular underpass and connect to the new frontage road on the east of the Interstate. About 1.8 miles of existing trail on the east of the interstate beginning near the Grasshopper Creek Interchange and extending northerly would be improved by grading.

New prestressed concrete bridges would be constructed for the frontage road over the Beaverhead River, two structures on the Interstate over the interchange crossroad, one interchange ramp bridge over the Beaverhead River, two interstate crossings of the Beaverhead River, and at the Barretts Interchange.

Access would be controlled throughout the length of the project which necessitates the elimination of two at-grade approaches. Local traffic would be served by the Grasshopper Creek Interchange, Barretts Interchange, frontage roads and access trails. Drainage, irrigation and access facilities would be designed to perpetuate existing drainage, irrigation and local vehicular travel.

Right-of-way was purchased for the original two-lane construction. There would be a minor amount of additional right-of-way required for the construction of this project.

A boat ramp for small recreational boats, a fishing access trail, and parking area would be provided adjacent to the Beaverhead River, just north of Grasshopper Creek, as was suggested by the Montana Department of Fish and Game.

PIPE ORGAN LANDSLIDE

The existing Pipe Organ landslide involves a portion of the mountainside extending back from the Union Pacific Railroad tracks about 2,000 feet uphill and about 1,200 feet along the tracks. Movement of the slide began in 1965 when a cut was made for relocation of the railroad. The original plan was to move the Union Pacific



Railroad to the east, which would allow for construction of a river channel change, the interstate highway and a frontage road. The railroad line change never became a reality because of the landslide. Since August 1967, when the slide was stabilized by pumping, there has been no movement, proving the effectiveness of drainage in stabilizing the landslide. The drainage has been improved since by gravity drains. The gravity drainage wells were drilled in 1970, and the pumps removed. The water table in the slide is three to four feet lower than it was while the wells were being pumped.

In order to provide a slide safety factor acceptable to the railroad, a rock buttress and keyway is proposed with this project. The proposed buttress and keyway would be located 30 feet east of the existing railroad track and would run parallel to the tracks. The buttress would be approximately 50 feet high and 1,600 feet long. The new frontage road is proposed to be located on the east of the Interstate and across the top of the buttress.

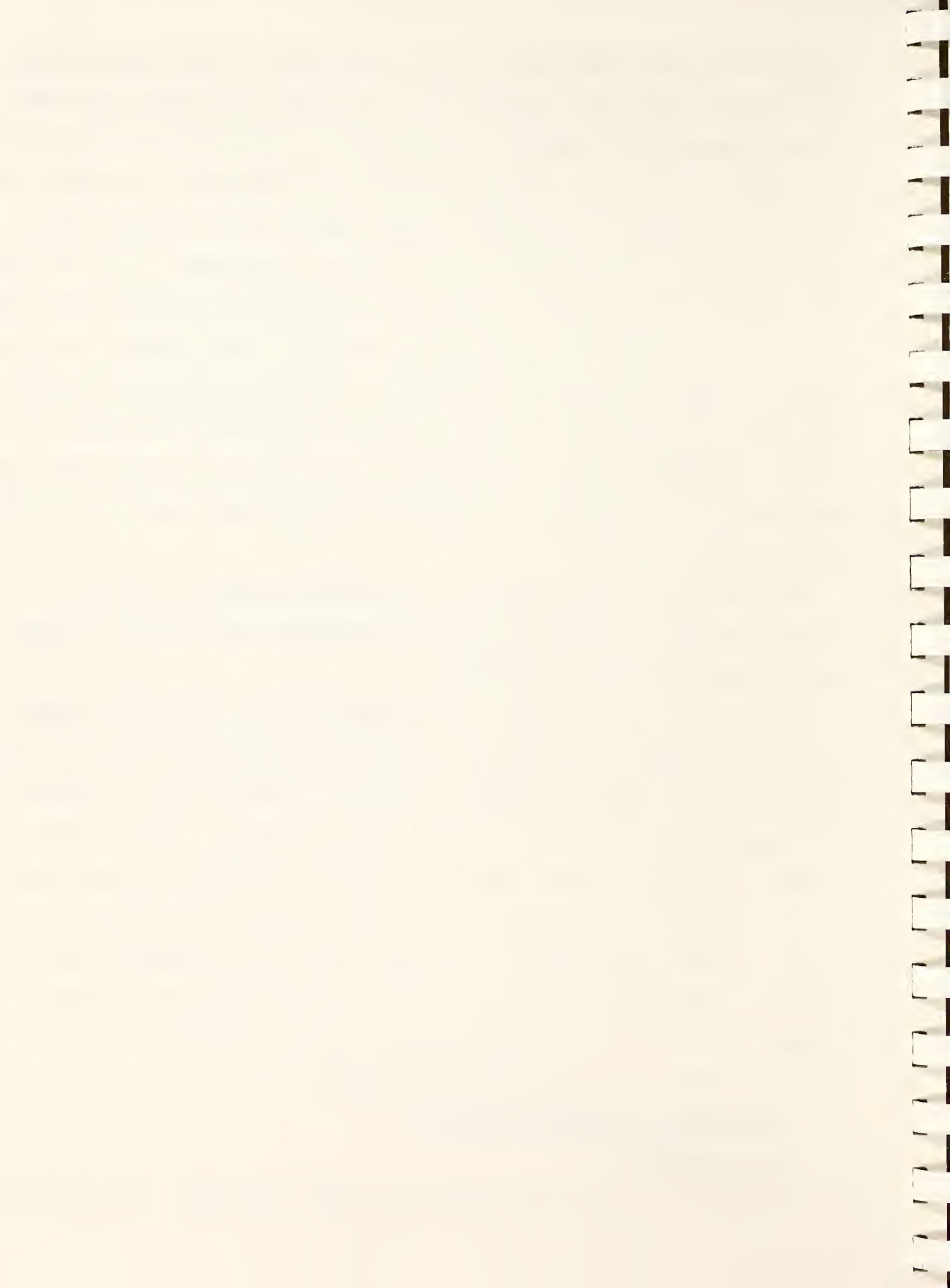
The railroad will not be relocated as was originally planned. This leaves a narrow corridor between the railroad, Beaverhead River and the bluff to the west through which to build the four-lane interstate.

There would be channel changes in the Beaverhead River in this narrow corridor. Some of the river channel was restricted by construction at the time of, or prior to the Pipe Organ slide, therefore it would be necessary to widen the river to provide a channel capable of passing 3000 c.f.s., which is the design flood, without flooding the highway or railroad. Another channel change would be necessary to provide protection of the railroad embankment adjacent to the river. It would also be necessary to construct a channel change approaching the bridge just north of Grasshopper Creek. There would be a considerable amount of excavation in the quartzite bluff to the west. The quartzite rock from the bluff would be used to build the buttress and keyway, the purpose of which is to stabilize the Pipe Organ landslide.

III. DESCRIPTION OF EXISTING ENVIRONMENT

A. Human Resources

Beaverhead County has a total population of 8,147, 1970 census. The city of Dillon



is the county seat with a population of 4,458, also 1970 census. The total population of Beaverhead County has increased 993 people in the last decade, 1960 to 1970. Of this, only 3.3% was in the rural area. The 1970 census showed the average per capita income of Beaverhead County to be \$2,640 as compared at that time to \$2,943 state wide. Unemployment rate in Beaverhead County is reported at 7½%.

B. Physiography and Geology

The Interstate alignment traverses near the west edge of a gently westerly sloping gravel pediment from the railroad siding of Red Rock north past Armstead to Horse Prairie Interchange at Clark Canyon Dam. In this portion of the project there is one predominant drainage crossing of Red Rock river which flows into the upper end of the man made lake formed by the Clark Canyon Dam. A few miles north of Red Rock River, the roadway skirts the high water line of the lake before reaching the interchange. Shallow soils overlie the pediment gravels.

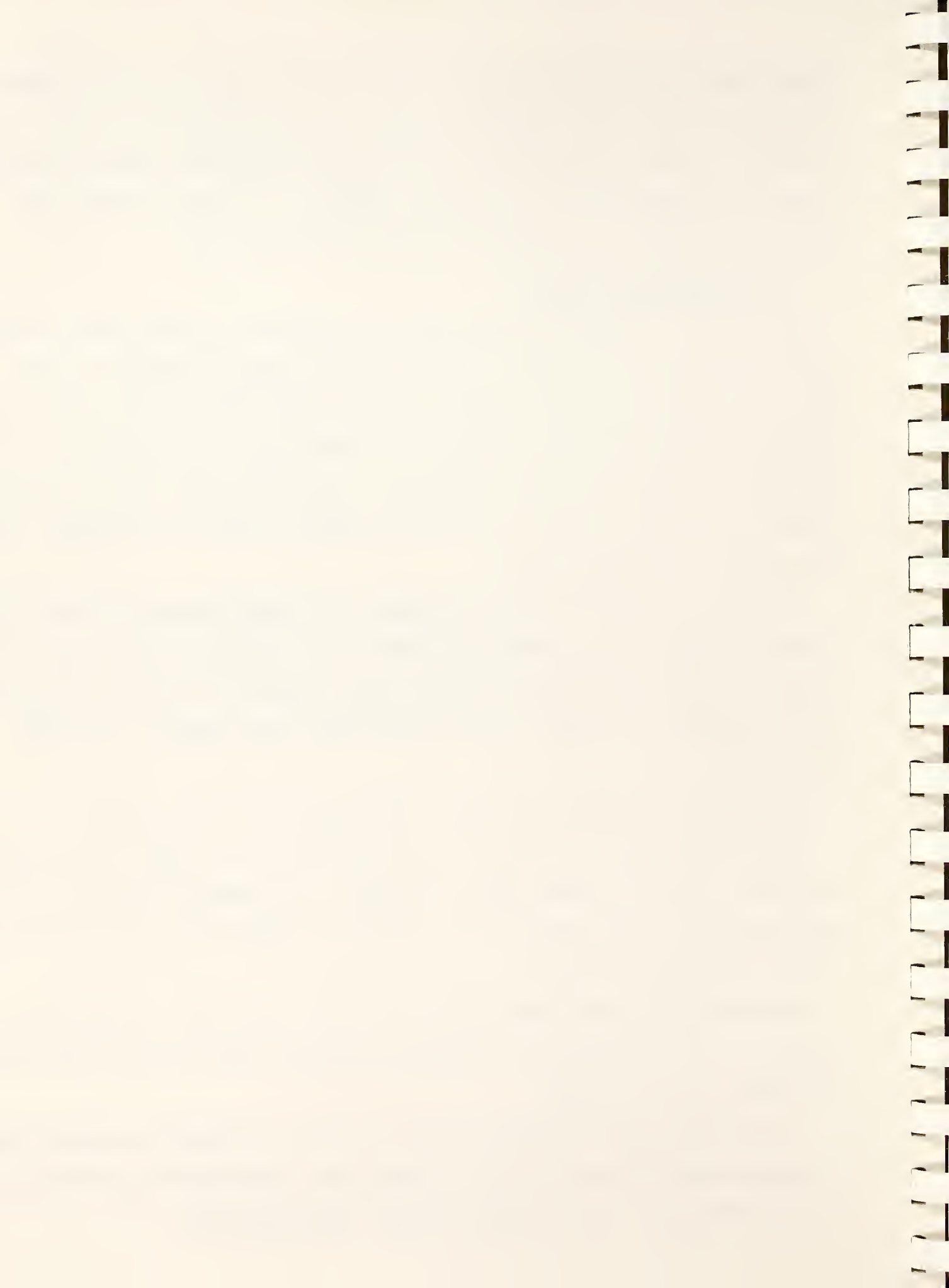
After leaving the Horse Prairie Interchange, the alignment basically follows the canyon flood plain of the meandering Beaverhead River, crossing the main channel of the river five times before emerging from the canyon at Barretts. Here the flood plain widens considerably. In general, shallow soils overlie river gravels in the narrow flood plains.

There are several constricted zones in the canyon part of the alignment.

At Clark Canyon about a mile and a half north of the dam, a stable ancient slide has forced the river eastward against the bluffs of the Beaverhead Formation. In this area the roadway crosses the top of the slide onto a bridge across the river and returns to the narrow flood plain.

Continuing on the flood plain the river is crossed again where the roadway narrowly misses the scenic Pipe Organ rock formation of columnar basalt flow that juts into the flood plain from the west.

A mile farther north at Dalys, the river, railroad, and highway are squeezed between a massive Quadrant quartzite bluff on the west and an active massive landslide of soft Tertiary formations. The slide bears the name "Pipe Organ Slide."



A short distance farther north, beyond two more river crossings, another large slide mass lies west of the right-of-way just beyond Grasshopper Creek. North of this slide the flood plain widens and is flanked by volcanics accompanied by hot springs found east of the river. Short zones of ash members of the volcanics are crossed by the roadway before the alignment emerges from the canyon onto the wide flood plain at Barretts. From this point to the end of the project, the alignment traverses the flood plain of the Beaverhead River.

C. Land Use

The total land area in Beaverhead County is 3,552,640 acres, of which 47.6% consists of farms and ranches. Agriculture is the main industry followed by mining, recreation and lumbering. All agriculture is livestock oriented with the exception of about 5,000 acres of winter wheat, about 400 acres of seed potatoes and about 2,000 acres of malting barley. Recreation in the area consists of fishing, hunting, boating, hiking, camping and picnicing. Alternatives to the present land use are few. 38.5% of the total county area is National Forest, 31.0% Bureau of Land Management, 9.4% State owned land, 0.2% water area, 0.1% Bureau of Reclamation, 0.9% Red Rock Land Refuge, with the remaining 19.9% being tax assessed lands and roadways.

D. Fish and Wildlife

The Beaverhead River and tributaries in the project area all contain self-sustaining populations of trout. The Beaverhead River provides excellent brown and rainbow trout fishing. Whitefish are also common in the area and provide fishing both in summer and winter. Other species of fish in the area are ling, longnose suckers, white suckers, sculpins and dace. Natural reproduction for all of these species occurs in the Beaverhead River and tributaries.

The same species of fish are found in the Red Rock River. The size of rainbow and brown trout taken is on the average as large as any other stream in the state. While the extent of spawning activities is not known, it is apparent that the stream is used by fish from Clark Canyon Reservoir for spawning purposes.

Both streams are fished by wading, and floating on the Beaverhead River is a popular



method of fishing. Fly fishing is popular as is bait and lure fishing.

Several species of resident and migratory waterfowl utilize the Beaverhead River in this area. Mallard duck hunting by floating or jump-shooting is very popular. Canadian geese are occasionally taken by these means. In addition to mallards, other ducks which use the area are bluewing and cinnamon teal, redhead, pintails, golden eye and mergansers.

Whitetail deer are common along the river bottoms. Mule deer and antelope are found in the area but antelope movements have been restricted by existing interstate fencing. There are no significant annual migrations of big game across the Beaverhead. There is the usual assortment of small game and non-game species of wildlife and fur bearers. Some trapping for fur bearers takes place in the area.

Other bird life includes occasional sage grouse and assorted song birds and shorebirds. Since the area along the riverbank is heavily vegetated, cover is provided for a wide species diversity of many kinds of wildlife.

E. Vegetation Resources

The valley consists predominately of sub-irrigated hay and pasture land, the water table averaging two to three feet below natural ground. The area along the Beaverhead River is wooded with snowberry shrubs, cottonwood trees and willows.

F. Climate

The climate from one end of this valley to the other varies greatly. In the Lima area on the southerly end of the valley, there is an average of 87 frost free days of growing season. On the northerly end of this project, or the Dillon area, there are about 113 frost free days of growing season. The average July temperature of the Dillon area is $+61^{\circ}$ and in January $+24^{\circ}$. Subzero temperatures for short durations occur during the winter months. The average precipitation varies from 11.6 inches in the Dillon area to 9.3 inches in the Lima area. Monthly distribution of rainfall varies, but the largest portion falls during May, June and July. Snowfall is relatively light in this valley.

G. Transportation

Public transportation in the Beaverhead Valley is provided by the Union Pacific Railroad running one freight train daily each way between Salt Lake City, Utah and Butte, Montana; however, the Union Pacific Railroad does not offer passenger service. Intermountain Transportation Bus Lines offers passenger service through Dillon between Salt Lake City, Utah and Butte, Montana. There are three scheduled trips daily each direction. There are no commercial airlines serving the area, although a county owned airport three miles east of Dillon serves light aircraft.

H. Utilities

The Montana Power Company and the Vigilante Electrical Cooperative serve all power and natural gas needs in this area.

I. Medical Facilities

This area is served by a new hospital, Barrett Memorial Hospital. It is staffed by four resident physician-surgeons and four registered nurses. Ambulance service is offered by a private firm in Dillon. There is also one verterinary hospital located in Dillon.

J. Educational Facilities

Beaverhead County High School is located in Dillon and has an enrollment of 835 students.

Western Montana College is also located in Dillon and has an enrollment of 800 to 900 students.

K. Scenic Areas and Points of Interest

The Lewis and Clark Expedition traveled through the Beaverhead River Valley in 1805. Many of the scenic areas and natural phenomena noted in their journal have since become historic points of interest. The old Sacajawea Rock was relocated to the recreation area adjacent to Horse Prairie Interchange. About 9 miles south of Dillon along the present highway, are found two "hot water" waterfalls. One is visible from the highway; the other is not. The temperature of this water stays very close to 72^o. The many stages of the falls vary in height from two to thirty feet.



The Pipe Organ rock formation (so named because of its resemblance to the pipes on a pipe organ) is located west of the interstate. This landmark is of local significance and no adverse environmental effects are anticipated.

The Department of Highways has a working agreement with the Director of the Statewide Archaeological Survey, Department of Anthropology, University of Montana to review all highway projects and determine the presence or absence of archaeological resources. The present policy is for this review to take place approximately one year before commencement of scheduled project construction. Since construction of these projects is not scheduled for over a year, the archaeological review has not been completed for all of these projects. Montana State Standard Specifications for Road and Bridge Construction Article 11.03(k) Artifacts specifies the procedures to be followed should previously unknown archaeological resources be encountered during project development.

The Clark Canyon Rock Shelters are located approximately 130 feet west of the Interstate highway. Construction would not disturb this site as the nearest excavation would be about 40 feet away. The early historic pictographs and possible Indian artifacts found in the shelters are being investigated and studied by the University of Montana, Department of Anthropology, and are recorded as Arch. Survey No. 24 BE 1005. The director of the Statewide Archaeological Survey has indicated by the attached letter that highway construction may proceed without endangering unsalvaged or unchecked antiquities. Special provisions for this project state that no work will be accomplished in the area of this site until the University of Montana Anthropology Department has been notified and given a reasonable time to have a representative present during construction.

The area's ranching economy dates back to 1865.

IV. EVALUATION OF ENVIRONMENTAL IMPACTS

A. Environmental Impact of the Proposed Action

The existing two-lane I-15 highway traverses the Beaverhead Valley and parallels the Union Pacific railroad and the Beaverhead River. This project proposes to add two more lanes of highway to the existing highway in order to help complete the Interstate



System of Highways. There would be a minor amount of new right-of-way required (approximately 130 acres). The access to the Interstate would be controlled, but local access would be perpetuated by means of frontage roads, access trails and interchanges. There would be little alteration to the existing character of the area except in the area of the Pipe Organ landslide.

There would be no displacement or relocation of families. The project would provide increased safety and efficiency, thus benefitting motorists driving to and from work and church in the area. School buses would also benefit from these improved features.

An increase in employment may be expected during the construction period.

The vertical profile of the new two-lanes will be approximately the same as the existing highway, except in the area of the Clark Canyon Reservoir. In this approximate 4.4 mile section, the profile of the new two-lanes would be lowered in order to blend with the cross slope of the existing terrain, reduce the height of fills, and to give both directions of traffic a panoramic view of the Clark Canyon Reservoir area.

The highway passes near the Pipe Organ Rock formation. The new construction would not disturb this landmark, but there would be a minor amount of clearing of talus material in this area in order to provide for construction of a new access trail and an irrigation pipe.

The character of the area around the Pipe Organ landslide would be altered by the excavation of the face of the quartzite bluff and talus west of the slide area. This excavation is required to widen the narrow corridor to provide room for the four-lane Interstate between the Union Pacific railroad, Beaverhead River and the bluff. A river channel change would also be necessary in this area. The rock excavated from the bluff will be used to construct the 50 foot high by 1,600 foot long buttress and keyway. The buttress and keyway are necessary to stabilize the Pipe Organ landslide.

Ramps for small recreational boats at two locations in the banks of the Beaverhead River will provide access for fishermen and others desiring to float the Beaverhead River.

Wildlife would be affected by the additional two-lanes of highway. Since only a minor amount of brush would be removed, the effect on wild bird life would be minimal. Whitetail and mule deer live in the Beaverhead Valley. Some deer will cross the highway and since the four-lane highway will present a wider barrier to cross, there would be increased danger of deer and auto collisions. The Department of Fish and Game was

contacted, and stated that no major game migration occurs within the project limits. They also say that any antelope movements across the roadway have probably already been precluded by the existing highway.

Some fish life would be disturbed by the new construction. Riprap would be used at all bridge ends to protect the highway embankment from erosion. A channel change would be necessary at the Red Rock River crossing. The contractor would submit a plan of channel change construction to minimize pollution of the stream. A channel change of the Beaverhead River in the area of the Pipe Organ landslide would be necessary. Portions of the original channel were filled prior to the landslide, since the plan at the time was to relocate the railroad and river. The existing river channel and vegetation in this area would be disturbed only at certain locations where the existing channel is too narrow.

It is proposed to provide a two foot wide berm on each side of the channel, about halfway up the side along the channel changes at the 1300 cfs profile, wherever possible. This berm would allow a space for vegetation such as willows to grow, thus improving the fish habitat over that which usually results when channels are changed. The berm also would provide a walkway for fishermen. The design of the channel change and related features is being coordinated with the Montana Department of Fish and Game. Streambank vegetation will be preserved wherever possible. The contractor would submit a plan of channel change construction and haul bridge construction to minimize pollution of the river in this area. Roadway slopes would be steepened in two short sections to eliminate constriction of the river, but some riprap would be required at one of these locations.

The keyway area would be excavated in the vicinity of the Pipe Organ landslide, and the excavation would be dewatered by pumping the water and discharging it into the Beaverhead River. Water would not be pumped into the river unless it meets the quality required by the State Department of Health and Environmental Sciences. A field investigation revealed the possibility of this water being poor quality due to low dissolved oxygen and low temperature. However, the quality of the water at the time of construction and pumping could vary considerably from what has been tested. Provisions would be

made with the contractor to minimize the impact of this pumped water on the Beaverhead River. Requirements of Section 07.11 (b) siltation Control and 07.11 (c) Water Pollution, of the Montana Department of Highways Standard Specifications would be observed. A waste permit from the Montana Department of Health and Environmental Sciences would be required. The Department of Fish and Game has been involved in discussions relative to this matter.

Although an increase in noise may be expected, it is not anticipated that it would be significant because the area is so sparsely populated. A nomograph analysis projection shows that the observer would have to be closer than 60 feet from the noise source to experience the allowable 75dBA for land use category C as shown in PPM 90-2. There are no cases which would approach this.

An increase would probably occur at the Clark Canyon Recreation Area, but this would be true with or without the project since the traffic would increase the same amount in either case. A projected nomograph analysis shows that the observer would have to be closer than 140 feet from the noise source to experience the allowable 70 dBA for land use category B. The distance would be greater than 140 feet.

B. Adverse Environmental Effects Which Cannot Be Avoided

The taking of a minor amount of right-of-way (approximately 130 acres) is unavoidable.

The character of the area around the Pipe Organ landslide would be altered by the excavation of the face of the bluff west of the slide area. This excavation would be accomplished by the "presplit" method of blasting. Talus from the base of the bluff would be removed and used as roadway embankment or in the buttress. The addition of the rock buttress would also alter the character of the area. This is unavoidable since it is necessary to provide room for the four-lane Interstate highway.

Some deer would cross the highway and there would be danger of deer and auto collisions. There would be some loss of deer population. As previously stated, no major game migrations occur; therefore, danger of deer-auto collisions would be minimal.



Flat curves, vertical and horizontal, providing good sight distance along with one-way roadways where the motorists can maneuver, are features of the highways that would help reduce accidents.

Some fish life would be affected by the construction of bridges, channel changes and riprap. Compliance with the pollution requirements of the Montana Department of Highways Standard Specifications and the Montana Department of Health and Environmental Sciences regulations would help to minimize the impact of the construction on the fish population. Also, proposed plans for channel change and haul bridge construction submitted by the contractor prior to construction would help bring to light any possible water pollution problems.

Approximately 1.7 acres of Section 4(f) land at the Clark Canyon Recreation Area would be needed for construction of the add 2 lane interstate in the interchange area. The majority of this acreage (about 1.5 acres) is needed for reconstruction of the access road leading to the recreation area; the remaining ± 0.2 acre would be taken from the northeast corner of the existing parking area.

An increase in noise can be expected due to the future increased traffic volumes but this would occur regardless of whether or not the project were to be constructed since traffic volumes would increase in either event.

C. Alternatives

One alternative is not to build this project. This would leave an uncompleted section of Interstate 15 with the associated hazards. It would not be in compliance with the National System of Interstate and Defense Highways. For these reasons, the "no build" alternate should not be considered further.

These projects basically propose to add two-lanes of roadway to the existing two-lanes. The new construction would bring the highway up to interstate highway standards. The alternate of adding the two lanes parallel to the existing roadway and disturbing as little as possible was chosen over locating the roadway in a different area and disturbing a great deal more of the environment.

At one time, consideration was given to an alternate alignment which would be

located behind the quartzite bluff through the saddle. This alternate was reexamined by soil engineers and geologists because the present alignment requires changes in the Beaverhead River channel and also several hundred thousand yards of excavation in the quartzite bluff.

Core samples taken during the 1966 investigation revealed a soft talc layer, thirty feet deep lying at the base of the proposed cut. To ensure stability of the cut, slopes would have to be laid back at 8 horizontal to 1 vertical making the cut about a quarter mile wide at the top. If the slopes were not laid back on such an extremely flat angle, there would be real danger of a landslide comparable in magnitude to the Pipe Organ landslide. The risk and expense of this cut makes this alternate undesirable. From the standpoint of adverse effect on productive flood plain and fish and wildlife resources, this alternate is a more favorable one.

Several alternates were considered in regard to the Section 4(f) land at the Clark Canyon Recreation Area.

ALTERNATE 1. A design which would move the recreation access road in as close as possible to the southbound off ramp of the Horse Prairie Interchange was originally proposed. This would approximate the alignment shown on the attached preliminary master site plan as prepared by the Montana Department of Fish and Game, but it would be a more direct approach. (See alignment on Exhibit 2.)

The Bureau of Reclamation and the Montana Department of Fish and Game consider this alternate unacceptable because it would be too direct of an approach to the picnic grounds and it would be aesthetically unpleasing to the users of the area.

This alternate is estimated to cost about \$49,000, and would require about 1.7 acres of right of way and a temporary easement of about 3.9 acres.

ALTERNATE 2. The Department of Fish and Game in coordination with the National Park Service developed an alternate design which would locate the access road approximately as shown on the preliminary master site plan and Exhibit 2.

This alternate would leave enough room between the recreation road and the interstate to plant a tree screen which would serve as a sight and sound barrier from the

interstate highway traffic.

Curvature would be introduced in the access road, which would eliminate the more direct access that was considered undesirable in the Alternate 1 proposal. About 1.7 acres of right of way would be required and a temporary easement of about 5.4 acres. The cost of this alternate including all items listed in the attached Memorandum of Understanding (which are the Department of Highways' responsibility) is estimated at \$80,000. This is the proposed selected alternate.

ALTERNATE 3. A third alternate that was studied would be to abandon the present recreation area and develop a replacement site on the westerly side of the dam.

After studying this proposal the Department of Fish and Game estimated it would cost \$116,000 to develop this area in a manner that would compare to the existing site. This alternate would eliminate a "convenient access" recreation area and the cost would far exceed other alternates without providing additional benefits. It would therefore not be prudent to select this alternate.

ALTERNATE 4. This alternate which was suggested in the Department of the Interior's reply to the draft EIS/4(f) statement was considered. Basically it would consist of shifting the interstate alignment to the east.

An alignment shift to the east far enough to miss the recreation area and at the same time avoid a railroad alignment change would not be feasible due to the limited space available.

ALTERNATE 5. This alternate would be not to build this project. This would result in a hazardous gap in the four lane interstate highway network and would not comply with the intended purpose of the law. Therefore, the no build alternate is not considered prudent.

The Exhibits Section contains a sketch showing the recreation area of 16.3 acres, the picnic and parking areas, the high water line, the Horse Prairie Interchange, and the existing access road to the recreation site. Also included are two photographs; the first taken from the top of the dam looking southeast showing the recreation area and the facilities described above, and the second showing the easement area required

to construct the new access road. In addition, a sketch of the Department of Fish and Game preliminary master site plan is attached.

The accompanying Memorandum of Understanding between the Montana Fish and Game Commission and the Montana Department of Highways outlines in detail the responsibility of each in design and planning to minimize harm to the recreational area.

The Fish and Game concurrence reflects the concurrence of the Bureau of Reclamation, since Fish and Game periodically utilized the Bureau as a sounding board in the development of the Memorandum of Understanding. The National Park Service is the Bureau of Reclamation's counsel in recreational matters.

It is therefore determined that the most feasible and prudent alternative is Alternate #2 as stated in the foregoing and in the Memorandum of Understanding, and that all feasible measures to minimize harm will be taken.

D. Relationship Between Short-Term Uses of Man's Environment and the Maintenance and Enhancement of Long-Term Productivity

In the vicinity of this project it can be estimated that short-term use as well as the long-term use of the environment of the Beaverhead Valley will be for the most part of an agricultural nature. The construction of this project should not change the agricultural business being conducted in the area at present. As time progresses, more use will be made of the highways and the demand will be greater for roads that provide safe and efficient transportation.

E. Irreversible and Irretrievable Commitments of Resources

The amount of land taken for new right-of-way would be small; approximately 130 acres. Although this land would not be rendered useless, it would no doubt be taken out of production for a long time.

The project would have no adverse effect on cultural or social resources.

There would be no resources other than normal construction materials, energy and monetary expenditures irreversibly or irretrievably committed to the project. Most of the land could be returned to its natural state by obliteration of the roadway, if done properly, should the need ever arise.

V. BENEFITS

All people traveling this highway would benefit by having an improved highway that provides safer and more efficient transportation. An improved highway would benefit this area, which is devoted mostly to agriculture, by providing better farm-to-market movements.

The stabilization of the Pipe Organ landslide would help to insure a safer area for the railroad, highway and the general public, as well as to perpetuate the flow of the Beaverhead River.

VI. MINIMIZING ADVERSE ENVIRONMENTAL EFFECTS

An effort has been made to fit the roadway to the terrain wherever possible. The section of proposed two-lane highway adjacent to the Clark Canyon Reservoir in particular, would be lower than the existing lanes in order to blend with the cross slope of the natural ground as well as to provide a view of the reservoir area for both directions of travel.

Slope rounding, topsoiling and seeding of disturbed areas are measures that would be taken to minimize environmental damage. Embankment protectors and riprap, where necessary, would be used for protection against erosion. Natural vegetation would be preserved wherever possible. Contour grading would be used on the interchanges to improve their aesthetics.

Clearing and grubbing would be done at such times and in such a manner that the surrounding vegetation, adjacent property and anything designated to remain on the right-of-way would not be damaged. The dragging, piling and disposing of debris, and work which may be injurious to vegetation would be confined to areas which carry no vegetation or which would be covered by embankments or disturbed by excavation necessary for construction of the project.

Vegetation adjacent to streams, ponds or lakes would be preserved.

The engineer would designate trees, shrubs, plants or other objects which would remain. The contractor would preserve all objects so designated.

The contractor would avoid injury to trees, shrubbery, vines, plants, grasses and other vegetation growing on areas outside of the slope limits of excavation and

embankment. The contractor would paint as required cut or scarred surfaces of trees or shrubs selected for retention.

The contractor's work trails would not be located closer than 20 feet inside of the actual clearing limits. This would preclude the under-cutting of live root systems supporting vegetation adjacent to but outside of the designated clearing limits. Cleared or grubbed debris would be disposed of in approved areas.

Salvageable topsoil material, when available within areas to be excavated and areas upon which the embankment is to be placed, would be removed and stockpiled for later use.

Topsoil would be placed and spread so that it would have a minimum thickness of four inches. After the spreading of the topsoil, all large stiff clods, hard lumps, stones, brush, roots (other than native grass roots), stumps, litter or other foreign material would be raked up and removed from the topsoil area.

Areas to be seeded would be reasonably free of large lumps, clods and impervious crusts of dirt.

Seed would be applied to the conditioned seedbed no longer than 48 hours after the seedbed has been conditioned.

The seeding of inslopes, narrow medians or small areas which are impractical to seed by drill may be performed by using broadcast seeding methods.

Hydraulic seeding would be used when the seedbed surface is too wet or swampy to permit seeding by drill.

Broadcast hydraulic seeding would not be used during adverse weather.

It is likely that the new facility would reduce the concentration of auto emissions due to the improved traffic flow characteristics the 4-lane design would provide. Both carbon monoxide and hydrocarbon emissions are reduced as a vehicle's speed increases and braking and acceleration movements become less frequent.

The requirements for review of projects as established by the Environmental Protection Agency are an indication of the minor amount of air pollution that would be produced by traffic using this facility. Their concern for air quality begins generally when the 10 year projected traffic is 20,000 vehicles per day. This is about

eight times the volume of traffic expected on this project in the year 1992.

This project would not be in conflict with the State's Implementation Plan for achieving federal ambient air quality standards.

Measurements proposed to minimize harm to Section 4(f) land at the Clark Canyon Dam Recreation Area are stated in the attached Memorandum of Understanding between the Montana Department of Fish and Game and the Montana Department of Highways.

VII. PUBLIC HEARING COMMENTS

The design public hearing for these projects was held on Thursday, August 30, 1973 in Dillon, Montana. The major design features and location of the projects were presented at this meeting.

Some people attending the hearing requested a change in the proposed access facility for the Henneberry Gulch area. The present access is provided by means of an at-grade approach, frontage road and a 17'3" X 12' vehicular underpass. They testified that the 12' height does not provide room for large stock trucks. They also requested an interchange at this location. The design presented at the hearing would remove the at-grade approach, since this is a fully controlled access highway. Access to this area would be by means of frontage roads from the Horse Prairie Interchange or the Grasshopper Creek Interchange through the 17'3" X 12' vehicular underpass. Additional study by the Montana Department of Highways and the Federal Highway Administration determined that an interchange at this location is not warranted. However, it is now planned to replace the vehicular underpass pipe with a bridge type structure to allow passage of large stock trucks.

Some people voiced concern regarding the gravel frontage road in the vicinity of Barrett's Interchange. However, it is now planned to place a bituminous surface on this road.

VIII. COMMENTS FROM GOVERNMENT AGENCIES AND INTEREST GROUPS

The following are letters received commenting on the draft environmental impact

statement. Where a reply is in order, it follows the letter.

Also, included is the Department of Highway's air quality determination concurred in by the FHWA Division Engineer.



DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

MAILING ADDRESS
COMMANDEP (mep)
THIRTEENTH COAST GUARD DISTRICT
618 SECOND AVE.
SEATTLE, WASH. 98104
PHONE: (206) 624-2902

5922/19
Ser mep 939
24 August 1973

Department of Highways
State of Montana
Helena, Montana 59601

Gentlemen:

Thirteenth Coast Guard District has completed its review of your Draft Environmental/Section 4(f) Statement for Armstead-N. & S., Pipe Organ-N. & S., and Pipe Organ N project. Inasmuch as the bridges described in this statement will be located over "advance approval" waterways, bridge permits will not be required.

Federal Water Pollution Control Act Provisions will apply to this project. Where possible, contractors should restrict equipment fueling operations and oil storage to diked areas away from waterways.

Sincerely,

S. S. BECKWITH

Captain, U. S. Coast Guard
Chief, Marine Safety Division
By direction of the District Commander

Copy to:
COMDT (G-WEP)
CCGD13 (oan)

[illegible]



DEPARTMENT OF HIGHWAYS AND URBAN DEVELOPMENT
FEDERAL HIGHWAY DIVISION
3100 7th Street S.E.
DEVELOPMENT DIVISION

August 7, 1973

Mr. H. J. Anderson
Director of Highways
State of Montana
Department of Highways
Helena, Montana 59601

Dear Mr. Anderson:

Subject: Comments on Draft Environmental Impact Statement
I-15-1(32) 37- Amendment-N. & S. - I-15-1(31) 46
Pipe Organ-N. & S. - I-15-1(36) 51- Pipe Organ
North

We have reviewed the subject draft Environmental Statement transmitted to us by your July 13, 1973 letter, received by this office on July 25, 1973.

As you know, HUD is primarily concerned with (1) the effect of a proposed action on the urban environment and (2) the consistency of such action with the comprehensive planning for the area.

From the geographic location and the percentage land use breakdown it is assumed that there will be very little effect on an urban area. Therefore our only comment with regard to the proposed project is that methods of minimizing the adverse environmental effects which are inherent with the construction and long term use of such a facility be considered; i.e., noise pollution, air pollution, etc.

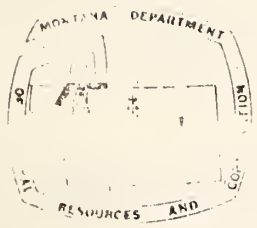
If you have any questions on the above comments, please do not hesitate to contact us.

Sincerely,

Robert J. Balachek
Acting Assistant Regional Administrator
Community Planning and Management

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Consideration of minimizing the adverse environmental effects such as noise, air, and water pollution which are inherent with the construction and long term use of the highway have been included in the body of the statement.



MONTANA DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

GARY WICKS, DIRECTOR

MEMBERS OF THE BOARD

JOSEPH W. SABOL, CHAIRMAN
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RILEY OSTBY

Cecil Weeding
David Drum

Owen E. Sowerwine
Dr. Wilson F. Clark

449-3647
SAM W. MITCHELL BUILDING
HELENA, MONTANA 59601

August 6, 1973

Stephen C. Kologi, P.E.
Supervisor-Preconstruction Section
Montana Department of Highways
Helena, Montana 59601

Dear Mr. Kologi:

We have reviewed the draft environmental impact statement for the Armstead and Pipe Organ sections of I-15 and offer the following comments:

1. No mention is made of possible increased flood heights on the Beaverhead as a result of flood-plain constriction. Was this considered, and, in particular, does the proposed constriction increase the 100-year flood elevation by more than 0.5 feet?

2. Since transportation routes paralleling streams often significantly increase flood hazard and disrupt the unique flood-plain environment, it would seem to us that more consideration should be given to alternative routes. Construction costs undoubtedly are higher for nonflood-plain routes, but the long-run indirect costs would certainly be less.

Thank you for the opportunity to comment upon this draft statement.

Sincerely,

A handwritten signature in cursive script, reading "Lawrence M. Jakub".

LAWRENCE M. JAKUB
SPECIAL STAFF ASSISTANT

LMJ/GMK/jd

cc: Gary J. Wicks
Fletcher Newby

MONTANA DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

1. See reply #10 to Dept. of the Interior's letter of comments.

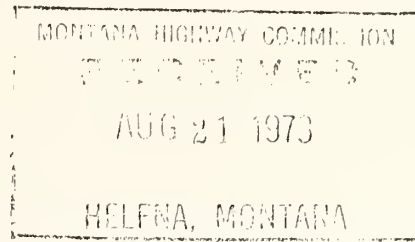
UNITED STATES DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

P. O. Box 970, Bozeman, Montana 59715

August 20, 1973

Mr. H. J. Anderson
Director of Highways
State of Montana
Department of Highways
Helena, Montana 59601



Dear Mr. Anderson:

The draft environmental impact statement 73-03D for I 15-1(32)37 Armstead N & S, I 18-1(31)46 Pipe Organ N & S and I 15-1(36)51 Pipe Organ N in Beaverhead County, that was addressed to U.S. Department of Transportation, Federal Highway Administration, Helena, Montana, was referred to the Soil Conservation Service for review and comment.

The ^{new} (only) practical route for the planned additional lanes is adjacent to the existing two lanes of interstate if environmental impacts are to be minimized.

Project action does not affect existing planned SCS projects.

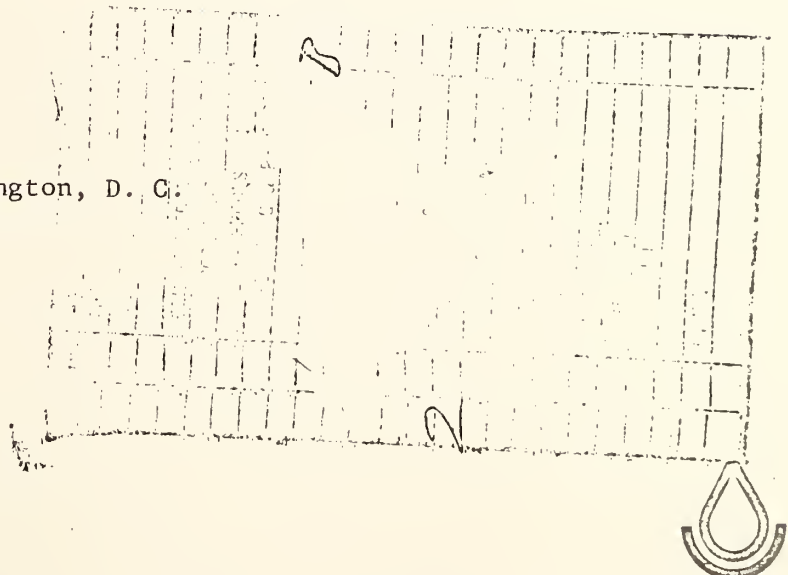
Adequate consideration is planned to minimize adverse effects on fish and wildlife habitats and natural plant communities. We recommend that planned topsoiling and revegetation of construction areas be contracted to be installed in early spring or late fall to improve establishment of vegetation. Construction methods should be specified to minimize erosion and sedimentation during construction.

We appreciate the opportunity to review and comment on the proposed project.

Sincerely,

A. B. Linford
A. B. Linford
State Conservationist

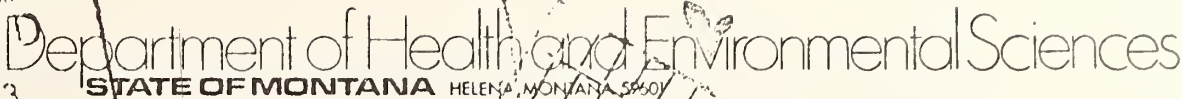
cc: Fred H. Tschirley, Washington, D. C.



UNITED STATES DEPARTMENT OF AGRICULTURE SOIL CONSERVATION
SERVICE

Construction areas will be topsoiled and seeded from October through May 15 to help improve establishment of vegetation.

Standard Specifications specify construction methods to minimize erosion and sedimentation.



August 2, 1975

Re: I 15-1(32)37
Armstead-N&S
I 15-1(31)46
Pipe Organ-N&S
I 15-1(36)51
Pipe Organ North

D. G. Willems, P.E., Chief
Water Quality Bureau
Environmental Sciences Division

DGN:RDB:v1f

DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES, STATE OF
MONTANA

Construction area will be topsoiled and seeded from
October through May 15 to help improve establishment of
vegetation.

Environmental Quality Council

HELENA, MONTANA

August 17, 1973

Stephen C. Kologi, P. E.
Supervisor-Preconstruction Section
Montana Department of Highways
Helena, Montana 59601

Dear Mr. ^{Steve}Kologi:

We wish to acknowledge receipt of and to submit the following comments on the draft environmental impact statement for the Armstead and Pipe Organ sections of I-15.

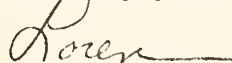
The repeated reference to and thereby emphasis on providing a fast transportation facility (p.p. 1, 6, 23, and 24) seems to run counter to recent efforts to conserve energy and particularly fossil fuels by voluntarily reducing vehicle speed. Assuming that fossil fuels (i.e., gasoline) are in finite supply, which indeed they are, and that a daytime speed limit in Montana is in the realm of probability, then the case for fast travel beyond what is currently possible on the existing structure would seem to be pointless. Safety of course is another matter, however, a highway need not be fast in order to be safe.

Since there appears to be no feasible routing alternative, this would seem to be an excellent opportunity to apply innovative architectural design in an attempt to keep the highway above the river channel and thereby preclude channel changes. We wish to ask if such design alternatives were considered and if so why they were rejected?

The direct effect of the highway on fish life in the river is secondary in importance over the long run to the effect on fish habitat. Although fish may suffer somewhat during the construction phase, the capacity of the river to consistently produce fish is a function of the total aquatic environment, including bank cover, food and water quality.

Thank you for your efforts toward compliance with the Montana Environmental Policy Act. We hope our comments have been constructive.

Sincerely yours,


LOREN L. BAHLS, Ph.D.
Acting Director

LLB/cjb

ENVIRONMENTAL QUALITY COUNCIL, STATE OF MONTANA

The design selected for the rather narrow canyon, station 875+00 to 920+00, was based on a number of considerations. Architectural structures were considered but ruled out because of the presence of the Pipe Organ Slide adjacent to the area and also structures would be expensive. A narrow median section was considered, but ruled out because of the danger of head-on collisions or collisions with guardrail. The design with 60 feet center to center of lanes was chosen because it was safer and more economical than the other alternatives. Some of the channel changes in this area are not the result of the location of the highway but are necessary to comply with the requirements of the U.P.R.R. to provide protection for the railroad embankment adjacent to the river. Also some of the channel changes are necessary to widen areas that had been constricted by construction at the time of or prior to the Pipe Organ Landslide.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VIII
1860 LINCOLN STREET
DENVER, COLORADO 80203

August 22, 1973

Mr. Stephen C. Kologi, P.E.
Supervisor - Preconstruction Section
Montana Department of Highways
Helena, Montana 59601

Dear Mr. Kologi:

The Environmental Protection Agency has reviewed the draft environmental statement for Project No. I 15-1(32) 37, 1(31) 46, and 1(36) 51. We find that the statement satisfactorily addresses the environmental impacts of the proposed action and its alternates.

In accordance with current guidelines of the Environmental Protection Agency this project and environmental statement will be categorized in the Federal Register as LO-1. A copy of the rating system is enclosed for your information. Please send us a copy of the final statement.

Sincerely yours,

John A. Green
John A. Green
Regional Administrator

Enclosure:

Date Recd. Preconst. 8-24-73	
MAIL ROUTE	Recd.
1. 15-1(32) 37	
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Environmental Impact of the Action

LO--Lack of Objections

EPA has no objections to the proposed action as described in the draft impact statement; or suggests only minor changes in the proposed action.

ER--Environmental Reservations

EPA has reservations concerning the environmental effects of certain aspects of the proposed action. EPA believes that further study of suggested alternatives or modifications is required and has asked the originating Federal agency to reassess these aspects.

EU--Environmentally Unsatisfactory

EPA believes that the proposed action is unsatisfactory because of its potentially harmful effect on the environment. Furthermore, the Agency believes that the potential safeguards which might be utilized may not adequately protect the environment from hazards arising from this action. The Agency recommends that alternatives to the action be analyzed further (including the possibility of no action at all).

Adequacy of the Impact Statement

Category 1--Adequate

The draft impact statement adequately sets forth the environmental impact of the proposed project or action as well as alternatives reasonably available to the project or action.

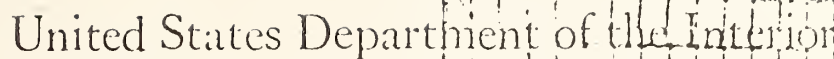
Category 2--Insufficient Information

EPA believes that the draft impact statement does not contain sufficient information to assess fully the environmental impact of the proposed project or action. However, from the information submitted, the Agency is able to make a preliminary determination of the impact on the environment. EPA has requested that the originator provide the information that was not included in the draft statement.

Category 3--Inadequate

EPA believes that the draft impact statement does not adequately assess the environmental impact of the proposed project or action, or that the statement inadequately analyzes reasonably available alternatives. The Agency has requested more information and analysis concerning the potential environmental hazards and has asked that substantial revision be made to the impact statement.

If a draft impact statement is assigned a Category 3, no rating will be made of the project or action, since a basis does not generally exist on which to make such a determination.



OFFICE OF THE SECRETARY

WASHINGTON, D.C. : 20240

MONTANA HIGHWAY COMMISSION

ER 73/1015

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HELENA, MONTANA

[illegible]

This is in response to your request for the Department of the Interior's comments on the draft environmental/Section 4(f) statement for the proposed improvements to Interstate 15 in Beaverhead County, Montana.

As presented, the draft does not include sufficient data to enable this Department to evaluate adequately the impacts of the proposed project. This is principally due to the limited discussions on pertinent information relating to the impacts and effects of the project on the natural environment. Also, there is a lack of suitable and legible maps to either support or follow references in the text with respect to the Section 4(f) determination.

Based on the information presented in VII, Section 4(f) Determination, and a recent site inspection of the area involved, we cannot concur (1) that the original design for restoring access to the Clark Canyon Dam Recreation Area is the most feasible and prudent alternate to the use of Section 4(f) lands and (2) that all measures to minimize harm to the area have been taken. The Section 4(f) submission should be improved and expanded to include information required by Appendix E of FHWA PPM 90-1.

Initially, we should like to mention that the National Park Service has an inter-departmental agreement to provide the Bureau of Reclamation with recreation development planning and periodic inspection of the recreation facilities at Hap Hawkins (Clark Canyon) Reservoir. Through this association with the area, we feel compelled to disagree with the comment in the statement that "design would have very little adverse impact on the recreation area" (second paragraph on page 27) for the following reasons:

9-24-73

✓ SCK	✓ HWA	✓ <i>Champion</i>
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1. A portion of an existing heavily used recreation development is proposed for inclusion into the highway right-of-way.
2. The entrance circulation pattern to the recreation area will be altered due to the highway construction.
3. This small recreation development is heavily used by passing motorists and it is the only area on the lake with direct access from the highway. It is expected that this off-highway use will greatly increase in the future with the increasing traffic on the new interstate highway.
4. The noise level increase at this recreation site is expected due to the anticipated increase in traffic volume.

Furthermore, there is insufficient information for us to evaluate adequately the suitability of the alternates presented. Also, it appears there may be another alternate that is not discussed in the draft. This one is to shift the alignment slightly to the east toward the right-of-way of the existing railroad and thus eliminating the need to use Section 4(f) lands on the west.

The third alternative (page 28) which would abandon the present recreation area and develop a replacement site on the westerly side of the dam should be discussed in detail and its environmental impacts assessed. We do not believe an alternative should be ruled out because of its probable complicated construction problems or its excessive construction costs.

The discussion of the "alternate design" (page 27) for restoring access to the existing recreation area is much too limited and warrants to be discussed further, since it is a result of coordinated effort among the State Highway Department, the Montana Department of Fish and Game, and the National Park Service. In addition, it is the only alternate presented with mitigating measures which could enhance the recreation area.

The Montana Department of Fish and Game (page 28) contends that this alternate would have a significant impact on the area involved and would require a revamping of the entire recreation area. We find no statements, communications or related evidence in the text to reflect this objection. Since the recreation area is administered by the Montana Department of Fish and Game, we suggest that the State Highway Department and the Montana Department of Fish and Game closely cooperate to seek solutions to the uses of the area involved and coordinate their actions with the National Park Service. The final statement should contain evidence to this effect.

The Section 4(f) Determination does not contain a discussion of measures to minimize harm to Section 4(f) land. This section of the draft statement should discuss specific measures which will be taken to minimize harm on the recreation area including the replacement of recreation lands to be taken for the highway or payment of compensation based on replacement value. We recommend that the compensation received be earmarked for capital park and recreation purposes. Other measures should include assurances to (1) design the access road suggested by the National Park Service and the Montana Department of Fish and Game to better utilize the minimum available space, (2) plant and irrigate a buffer planting screen between the interstate and recreation area, and (3) provide basic facilities to accommodate the traveling public at the site, including orientation and information facilities to direct the anticipated increased recreation use to other developments around the lake; minimum area lighting for safety and security purposes; and topsoiling and seeding all areas disturbed by roadways, embankments, and the obliteration of scars.

Environmental Statement Comments

We believe that the draft statement could be improved in several areas. While it refers to some of the environmental resources of the area involved, it does not always relate them to the project. There are several sections where additional information or further clarification is needed to strengthen the draft.

1. Descriptions of the Project and of the Existing Environment

The statement contains no description of water resources in the project area. However, there are references scattered throughout the draft that indicate water resources have been considered in relation to various construction techniques of the project. This segment of the draft should also contain a brief description of ground-water resources, especially the location of springs with respect to the proposed highway route. Should the project affect the flow of springs or should the springs require consideration in the design, such information should be included in the statement. ①

Clarification is in order of the effect on local water users in the Pipe Organ landslide area (page 12). Since gravity drainage wells were drilled in 1970 and existing pumps were removed, the local water table in the area is three to four feet lower than it was when the pumps were in operation. There may now be contamination of ground water through the surface drainage wells. ②

Additional data are needed to complete discussions pertaining to channel changing required during construction. As presented, only two locations (a) the Beaverhead River near the Pipe Organ landslide (page 12) and (b) the Red Rock River crossing site (page 20) are identified. According to the exhibit on page 32 depicting the proposed alignment, there are several other locations where channel changing may be necessary. The statement should quantify the number of channel changes and note their locations and length. ③

This section should also include flood hazard evaluation in compliance with Executive Order 11296. FHWA has issued Memorandum 20-1-67 to implement the Executive Order. Subsequently, in April 1972, the Water Resources Council issued "Flood Hazard Evaluation Guidelines" which "are to be utilized by Federal Executive Agencies in complying with Executive Order 11296." Only with this flood hazard information can reviewers comprehend the environmental impact of the highway on the flood plain. ④

The discussion on fish and wildlife (page 15) in the area involved is too general. Although some types of fish and wildlife present are identified, their abundance in the project area should also be recognized. The lack of this information makes it difficult to determine and evaluate the proposed project's impact on any species present. ⑤

This section of the draft does not contain evidence of consultation or contact with the State Historic Preservation Officer for the National Register as to the presence or absence of historical resources in the project area, to other matters pertinent to the Historic Preservation Act of 1966, and to Section 2(b) of the Executive Order of May 15, 1971, which deals with the Protection and Enhancement of the Cultural Environment. Such findings and recommendations should be reflected in the final draft statement. Also, should cultural resources be present in the project area and encountered during construction, mitigation measures must be fully discussed. Mr. Ashley C. Roberts is the State Historic Preservation Officer. His address: Administrator, Recreation and Parks Division, Department of Fish and Game, Mitchell Building, Helena, Montana 59601. ⑥

The statement indicates (pages 17 and 18) that an archeological site (24BE1005; the Clark Canyon Rock Shelter) occurs near a portion of the proposed action. These same pages also indicate that the Director of the Statewide Archeological Survey has stated that construction may proceed on this portion of the project without the execution of any mitigative measures other than the presence during construction of a representative from the Department of Anthropology, University of Montana. The final environmental statement should contain (1) a precise description of the location of this archeological site with respect to features of the proposed action, (2) the definition of any potential adverse impact to this resource, and (3) professional documentation of all archeological data, such as the letter from the Director of the Statewide Archeological Survey, which we suggest be appended in full. ⑦

In addition, the final environmental statement should consider possible impact to all cultural resources within the project areas. Consultation should be effected with the Statewide Archeological Survey for the purpose of determining the presence of known archeological remains. ⑧

2. Evaluation of Environmental Impacts

The statement frequently indicates that there will be only a minimal amount of additional right-of-way required. However, this is somewhat misleading to the reviewer. The total acreage of the right-of-way (300-400 feet in width) for the entire length of the highway is indeed sizeable. This information should be quantified and specific locations noted on the Exhibit on page 32. ⑨

Changes in the hydraulic characteristics of the flow of the Beaverhead and Red Rock Rivers caused by proposed bridging should be discussed in this section of the draft. The information should include expected velocities under bridges and whether or not these structures may cause scour and fill and over-bank flooding. In addition, any navigational clearances required by the U.S. Coast Guard should be related to high and low stream stages expected at the bridges. (10)

Since deer migrations are minor (page 22) in the project area, any loss of these would be of major consequence rather than minimal as stated. Any numbers of road kills would be of more significance to a small population of deer than to a large population. (11)

The description of alternates is somewhat limited and should be expanded. Alternatives should not be ruled out because of various relocation and geologic problems. Each alternate, including the "not to build" one, must be explored further to allow an impartial evaluation of its impact on the natural environment. (12)

The section, "Relationship Between Short-Term Uses of Man's Environment and the Maintenance and Enhancement of Long-Term Productivity," should be expanded. This section should recognize the long-term benefits--tree and shrub growth, wildlife, and grazing--that will give way to the project. These benefits should then be compared to those gained by the highway facility. This information should bring into focus for the decisionmaker those tradeoffs (economic, short-term versus natural environment, long-term) involved in this project. (13)

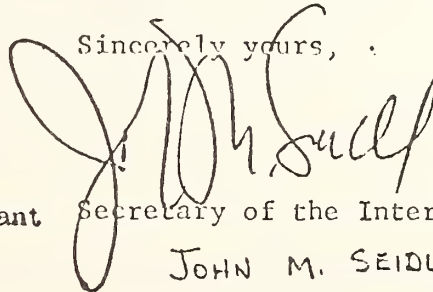
The "Irreversible and Irretrievable Commitments of Resources" segment (pages 23 and 24) of the draft should be expanded to discuss the irretrievable commitments of fish and wildlife, probable Indian artifacts/pictographs, and other related resources. Access paths and trails will likely originate from the new highway and increase access to and from Beaverhead and Red Rock Rivers, and the proposed Lewis and Clark National Trail. Such increased access and related human involvement would result in considerable increased pressures on these resources. The increased use and access would result in irretrievable commitments of fish and wildlife and other related recreational and historical values in the area. (14)

In addition, this section should discuss the amount of gravel and borrow needed for the right-of-way during construction. Specific locations, type of operations and related reclamation measures should be identified and described.

Because of the Department of the Interior's concern for the Section 4(f) aspects of the proposed project, we would be willing to review and comment, on a technical assistance basis, on any subsequent material which may be prepared. The field office assigned responsibility for this cooperation is the office of the Regional Director, Bureau of Outdoor Recreation, Mid-Continent Regional Office, P.O. Box 25387, Denver Federal Center, Denver, Colorado 80225.

The final position on the Section 4(f) determination will be made by this office when we are asked by the Department of Transportation to review the final combined environmental/Section 4(f) statement.

Sincerely yours, .



Deputy Assistant Secretary of the Interior

JOHN M. SEIDL

Mr. H.J. Anderson
Director of Highways
Department of Highways
6th Avenue and Roberts
Helena, Montana 59601

UNITED STATES DEPARTMENT OF THE INTERIOR

1. Major water resources in the project area are the Red Rock River, Beaverhead River, Clark Canyon Dam and Grasshopper Creek. The Beaverhead River is controlled by Clark Canyon Dam. See also reply No. 10.

Some springs lie in the project area. Where the alignment intersects the source or flow of these springs, they will be perpetuated with perforated underdrains and pipes.

2. Concerning the ground water in the area of the slide, test wells around the periphery of the area indicates no change in the regional water table. The water in the slide area is a perched ground water table, that has been draining through gravity wells into the permeable formations under the slide area. There are no local users of this perched water table. The wells are draining ground water and are not surface drainage wells. Therefore, there should be no contamination of ground water. The total effect on ground water of the gravity wells has been to lower or remove the perched water within the slide area with no observable change in the local or regional water tables.

3. There are two river channel changes on these projects: the Beaverhead River which is 2200 feet long near the Pipe Organ Landslide, and the Red Rock River crossing site which is about 300 feet long.

4. See reply No. 10.

5. The section on Fish and Wildlife has been expanded on pages 18 and 19.

6. A copy of a letter from the State Historic Preservation Officer follows these replies to D.O.I. This letter indicates that there are no historic sites within the project area listed on the National Register of Historic Places, but there are some sites within and adjacent to the project area which are listed in the Montana State Historic Preservation Plan. However, it does state that impacts of the highway project on historic resources will be negligible except in the Clark Canyon area where impacts are potentially great, but can be minimized if highway width is minimized and landscape features

retained. The highway width has been minimized as much as is safely possible in the Clark Canyon area and landscape features retained where possible. The University of Montana Anthropology Department shall be notified prior to construction in the area of the Clark Canyon Rock Shelters, although it is anticipated that construction will not affect the Rock Shelters.

7 & 8. "Scenic Area and Points of Interest" in the body of the statement has been expanded. Letters from the Statewide Archaeological Survey follow these replies to the D.O.I.

9. Right-of-way purchased for the construction of the existing two-lane is utilized for the projects. However, there will be approximately 130 acres of new right-of-way required.

10. The peak flows of the Red Rock River are regulated to some extent by Lima Reservoir and the peak flows of the Beaverhead River (same as Red Rock River) are further regulated by Clark Canyon Dam. All mainline structures for these projects have been designed to match the existing two lane structures. Minimum backwater elevations are controlled by the existing structures. Dual structures will create additional backwater, but only small reductions in the increase could be realized by making the add two structures longer than existing structures.

I 15-1 (32)37-Armstead N & S

The proposed structures for the Red Rock River and Beaverhead River crossings are to match the existing interstate structures. The existing structure at each site creates about 0.2 feet of backwater at the design flow. The proposed structure will increase the original backwater by less than 0.2 feet. The design flows for both crossings are the 100 year floods or greater. At both sites the proposed structure spans almost the entire channel with little constriction and, therefore, the velocities through the structure are nearly equal to those of the natural channel.

I 15-1 (31)46-Pipe Organ N & S

The proposed structures on this project are also designed for floods at least as great as the 100 year flood and to match existing structures. The structure at Station

562+ also spans an access road and does not create any constriction of the Beaverhead River. Negligible backwater will be realized due to the two piers on either bank. At Station 764+, three structures will cross the Beaverhead River with very little constriction of the channel. The total backwater from the multiple bridges will be about 0.3 feet. The velocity through the bridge opening will be increased less than 0.5 ft/sec. over the natural midchannel velocities.

I 15-1(36)51-Pipe Organ - N.

The mainline structures are also designed to match existing structures. These structures nearly span the channel and will create about 0.2 feet of backwater with little change in the stream velocity during the design flood. The design flood is at least as great as the 100 year flood.

Channel changes on this project are designed to convey the 50 year flood with free-board. The 100 year flood will be conveyed by the channel changes without overtopping the banks.

The frontage road structures have been designed to convey the 50 year flood with no constriction and were checked for the 100 year flood. With the 100 year flood these structures will create less than 0.3 feet of backwater and will increase the velocity through the structures less than 0.5 ft/sec. over the mid-channel velocities.

11. Since deer migrations are minor, danger of deer-auto collisions are minimal. Granted any loss of deer due to road kills would be significant to a small population of deer.

12. This section of the final statement has been expanded.

13. The construction of these projects will necessitate the taking of some agricultural land out of production, but will not change the agricultural business being conducted in the area at present. The loss of this land to the highway should not appreciably affect the ability of the area to produce livestock in increasing numbers, even though the total area available for grazing and for hay growth will be diminished. Because of this fact, the benefits gained by the new highway facility outweigh the loss of these long-term benefits.

14. See No. 6 above.

The proposed new rest area has since been deleted from the planning, and it is unlikely that the remainder of the new highway will increase pressure on the fish and wildlife resources of the Beaverhead River because this is a controlled access highway. It is possible that pressure on the fish and wildlife resources could actually diminish, or at least increase at a slower rate.

It is estimated that 1,200,000 cu. yds. of borrow will be required to construct these projects.

Specific locations where borrow material will be obtained are indeterminate at this time. The contractor who constructs the project has the option of locating his own borrow sources. Consequently, recommended locations for borrow sources, even though optioned by the Department of Highways, possibly may not be used by the contractor. Provisions regarding pit locations and reclamation are required for this project and are as follows:

The contractor will familiarize himself with the requirements of the Montana Open Cut or Strip Mined Reclamation Act (Chapter 224, Session Laws of 1971) and shall be in compliance with the requirements thereof.

Prior to the removal of any earth, quarried rock, sand, gravel aggregate or other substance from material sources outside of the highway rights-of-way, the contractor will have submitted a reclamation plan to, and received approval of the plan from the Montana Department of Highways.

Approval of the reclamation plan will be based on the overall effect of the finished slopes on the adjacent landscapes, the location of the pit relative to the view from the traveled roadway, possible adverse effect on streams, lakes and adjacent plant forms, and surrounding environment. In addition, the contractor shall shape, slope (recommend maximum 3:1 but in any event, pit walls remaining will blend with natural slope of adjacent area), revegetate, place top soil on, or in other ways provide a finished materials pit site that blends satisfactorily with the adjacent landscape and is acceptable in appearance to the engineer.

Overburden, including topsoil, will be stripped from all material sources and

conserved. After the pit or excavated area has been completed and all materials needed therefrom removed, the sides will be shaped, trimmed and sloped as required. Topsoil material and overburden will be placed back in the pit area. The entire excavated area including haul roads will be seeded and fertilized as shown in the Special Provisions.

STATE OF MONTANA

DEPARTMENT OF

HEALTH AND CLIMATE

Helena, Montana
November 13, 1973

Re: 39-JGS

Mr. Stephen C. Kologi, P.E.
Supervisor - Preconstruction Section
Montana Department of Highways
State Highway Building
Helena, Montana 59601

Dear Mr. Kologi:

As per your request, we have reviewed the draft environmental statements for the following interstate highway projects south of Dillon, Montana: F 241(20), I 15-1(5)51, I 15-1(32)37, I 15-1(31)46, I 15-1(36)51.

Presently, there are no historic sites within the project area listed on the National Register of Historic Places. There are several sites, however, within and adjacent to the project area which are listed in the Montana State Historic Preservation Plan and several sites which are not listed. The Vanderburgh Site, scene of an 1832 trapper-Indian battle, is listed in the Preservation Plan and located in the vicinity of Sections 8, 9, 16, 17; T8S, R9W. No visible evidence exists at this site and the impact of the highway project would be only a continuation of the alteration of the general environment which began long ago. Also listed in the Preservation Plan is the Montana-Utah Trail, an early freight route of the 1860's, paralleling virtually the entire length of the projects. The exact location or amount of visible remains of this wagon road is undetermined at present, but the project section within the narrow Clark Canyon area will undoubtedly obliterate more of the trail if indeed any of its remains escaped previous railroad and highway projects. The Lewis and Clark Expedition's Camp Fortunate, also listed in the Plan, is now unfortunately under the waters of Clark Canyon Reservoir.

Historic sites not listed in the State Preservation Plan include the Lewis and Clark Expedition route and four campsites. No visible evidence of course remains; however, the highway project will further degrade the historic environment of the expedition route, especially in the narrow Clark Canyon area. Rattlesnake Cliffs, immediately west of Barrett's Dam, is an important landmark named by the Lewis and Clark Expedition. The highway project will also have an impact on the historic environment here, especially if the highway or right-of-way encroaches on the base of the rock formation.

Mr. Stephen C. Kologi
Page Two
November 13, 1973

The Director of the Statewide Archeological Survey has indicated that the Clark Canyon Rock Shelters (24 BE 1005) near station 867+00 may contain important prehistoric cultural materials. The highway project environmental statement does not state their exact location in relation to project activities. If any of these activities would unavoidably alter the site, I strongly recommend that it be completely excavated and interpreted before highway construction is begun.

In summary, the impacts of the highway project on historic resources will be negligible except in the Clark Canyon area where impacts are potentially great, but can be minimized if highway width is minimized and landscape features retained.

To assist in future correspondence with us concerning historic preservation, I am enclosing some guidelines recently drafted to clarify the assistance that we may be able to provide.

Thank you for contacting us.

Sincerely,



Ashley C. Roberts
State Historic Preservation Officer

ACR/bd
Enclosure

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DEPARTMENT OF ANTHROPOLOGY
STATEWIDE ARCHAEOLOGICAL SURVEY

University of Montana

Assoula, Montana 59801

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HELENA, MONTANA

Jack R. Beckert
Assistant State Engineer
Montana Highway Commission
6th Avenue and Roberts
Helena, Montana 59601

Dear Mr. Beckert:

Enclosed, please find an archaeological "Preliminary Site Examination" progress report (and a copy of all field notes), by Dr. Charline G. Smith for research from 2 August through 20 August.

Highway project rights-of-way for projects

I-15-5 (57) 280

I-15-1 (40) 87

I-15-1 (49) 62

have now been surveyed, the archaeological sites inventoried, and test excavated. Archaeological materials and sites have been recorded, photographed and salvaged, or adjudged by us not to be of sufficient value for further work.

Therefore, please regard this letter as our certification that all Highway Commission obligations for archaeological survey and salvage have been met and that highway construction may proceed on the above listed projects without endangering unsalvaged or unchecked antiquities.

.. In the event that antiquities of which we are unaware are encountered during construction, we would appreciate being notified.

Sincerely yours,

Floyd W. Sharrock

Director, Statewide Archaeological
Survey

RECEIVE

APR 26

FWS:sg
Enclosure

KEN R. WHITE CO.
HELENA, MONTANA

MONTANA HIGHWAY SALVAGE PROJECT
PRELIMINARY SITE EXAMINATION

Progress Report August 2 through August 20

Charline G. Smith

August 2 to 5 was spent in preparation for the field expeditions.

Vaughn Quarry Site: Project No. I-15-5(57)280
Arch. Survey No. 24CA1003

August 5, a crew of three drove to the site where we were met by the four member. The site was examined, surface-collected, mapped, photographed, and tested. Returned to Missoula on the evening of August 7 with reports and film.

Results: Tests revealed no buried cultural materials. This is a quarry site; all necessary information and samples have been obtained.

Recommendation: No further action by the Archaeological Survey; it is our opinion that construction will not endanger this site.

Dillon Area: A crew of three left Missoula in the a.m. of August 10 and headquartered in Dillon until returning to Missoula from Projects I-15-1 (40) 87; I-15-1 (49) 62; and the Pipe Organ Slide area, in the p.m., August 17. From Dillon, the following sites have been examined and/or tested:

Angler's Paradise: Project No. I-15-1 (40) 87
Arch. Survey No. 24MA1003

Two half-days were devoted to examining, photographing, and testing. Results: No surface or subsurface cultural materials were recovered.

Recommendation: No further action by the Archaeological Survey; it is our opinion that construction will not endanger prehistoric materials.

Browne's Bridge Rest: Project No. I-15-1 (40) 87
Arch. Survey No. 24MA1002

One half-day was spent examining this and surrounding area and surface-collecting the site. No test pit deemed necessary.

Results: Four questionable flakes and a questionable hammerstone were recovered.

Recommendation: No further action by the Archaeological Survey, in our opinion, construction will not endanger prehistoric materials.

Dillon Quarry Site: Project No. I-15-1 (49) 62
Arch. Survey No. 24BE1007

To date, a total of five days has been devoted to examining, surface-collecting, mapping, photographing, and testing this site. Results: Surface indications are that this is an extensive quarry, about one-third of which will be destroyed by highway construction. Test pits are not sufficiently complete to permit a judgement about possible subsurface cultural materials.

Recommendation: Deferred pending completion of testing--about three or four days.

Clark Canyon Rockshelters (Pipe Organ Slide Area)
Project Number Unavailable
Arch. Survey No. 24BE1005

One-half day spent locating, evaluating, and planning for tests.

Results: Shelter No. ¹⁸2, which is the larger, may contain cultural materials mixed with or below the bat guano deposit. This entire cliff appears crumbly, and both shelters may be destroyed by blasting.

Recommendation: Extensive testing of both shelters, which will probably require four or five days. Further, because of the apparently thick guano deposit, precautions will be taken to protect the crew; and because workers may attract the attention of motorists on a dangerous curve, we will request appropriate warning signs on both approaches to the curve in order to reduce the likelihood of accidents.

Attached, see summary of time and mileage.

HIGHWAY SALVAGE PROJECT
PRELIMINARY SITE EXAMINATION

Time and Mileage to date: (August 2 through August 20)

Vaughn Quarry Site: Project No. 1-15-5 (57) 280

Time: 3 days (including travel)
Supervisor: 3 days
Two assistants: 3 days
One assistant: 2 days

Mileage: 441 @ .09

Dillon Area (by site)

Angler's Paradise: Project No. 1-15-1 (40) 87
Supervisor: 1 day
Two assist.: 1 day

Browne's Bridge: Project No. 1-15-1 (40) 87
Supervisor 1/2 day
2 Assist.: 1/2 day

Dillon Quarry: Project No. 1-15-1 (49) 62
Supervisor 4 days
One assist.: 4 days
One assist.: 3 days

Clark Canyon Rock Shelters (Pipe Organ Slide Area)
Supervisor: 1/2 day
One assist.: 1/2 day

Dillon Area (total)

Time: 8 days (including travel)
Supervisor: 8 days
One assistant: 8 days
One assistant: 6 1/2 days

Mileage: 587 @ .09

STATE HIGHWAY COMMISSION OF MONTANA

To G. E. FLEMING, CONSTRUCTION ENGINEER

Date September 17, 1971

From RAY G. ANDERSON, PROJECT CONTROL DIRECTOR

Subject:

SUBJECT:

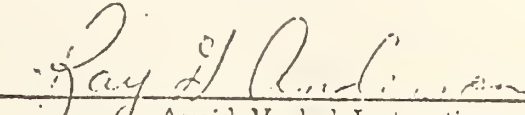
I 15-1(36)51 P.E., Pipe Organ-North
I 15-1(49)62, Dillon-North
I 15-1(55)87, Melrose-South
F 387, Dillon I Connection
I 15-5(57)280, Vaughn-North
I 15-8(28)343, Toole County Line-North

The attached letter from the University of Montana Anthropology Dept. shows the findings of their preliminary investigations on the above-captioned projects.

Mr. Sharruck's cover letter states that construction can proceed on these projects without endangering unsalvaged or unchecked antiquities. However, he goes on to state that they would like to be present when construction of the Pipe Organ-North project is underway where Site 24BE1005 is located. This is in the location of the slide area presently under design by Ken R. White Company.

RGA/LH/ed
Attachment

cc: Powers w/attachment
Kologi "
Anders "
Champion "
Beckert "


Avoid Verbal Instructions



DEPARTMENT OF ANTHROPOLOGY

University of Montana

Missoula, Montana 59801

(406) 243-0211
MONTANA HIGHWAY COMMISSION

RECEIVED

SEP -1 1971

HELENA, MONTANA

Jack R. Beckert
Assistant State Engineer
Montana Highway Commission
6th Avenue and Roberts
Helena, Montana 59601

Dear Mr. Beckert:

Enclosed, please find an archaeological "Preliminary Site Examination" progress report with an attached time and mileage summary by Dr. Charline G. Smith for research conducted between 21 August and 31 August 1971.

Highway Project rights-of-way for projects

I-15-1 (55) 67 1/2 MILE ROAD NORTH
F-387

I-15-1 (49) 62 1/2 MILE ROAD NORTH

I-15-5 (57) 280 MILE ROAD NORTH

I-15-8 (28) 243 1/2 MILE ROAD NORTH - No.

have now been surveyed, the archaeological sites inventoried, and test excavated where warranted.

Please regard this letter as our certification that all Highway Commission obligations for archaeological survey and salvage have been met and that highway construction may proceed on the above projects without endangering unsalvaged or unchecked antiquities.

If at all possible, we would like to be present when construction in Clark Canyon is underway. Site 24BE1005 there was excavated as completely as possible but more material may be lower than we were able to go given the proximity of the present highway and the necessity for removal of large boulders.

In the event that antiquities of which we are unaware are encountered during construction, we would appreciate being notified.

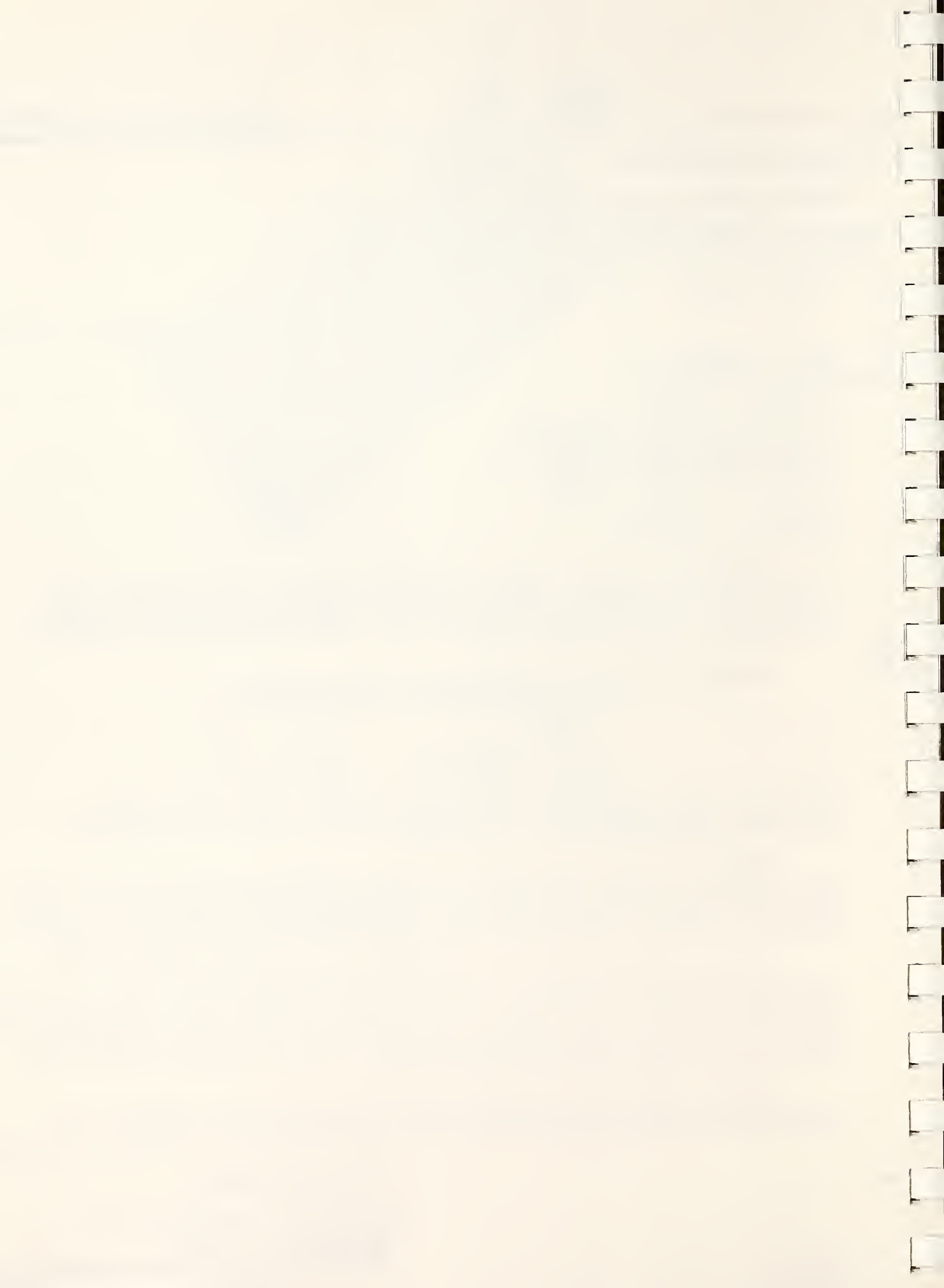
Sincerely yours,

Floyd W. S. Shrock

Floyd W. S. Shrock

Director, Statewide Archaeological Survey

FWS:sg
Enclosure



MONTANA HIGHWAY SALVAGE PROJECT

Preliminary Site Examination

Progress Report August 21 through August 31

Charline G. Smith

On August 21, 1971, a crew of four traveled from Missoula to Dillon to complete preliminary examination and/or testing of reported sites in that area. In the Dillon area, these include Projects No. I-15-1(55)87; F-387; I-15-1(55)67; I-15-1(49)62; and the Pipe Organ Slide Area (no project number). A time and mileage summary is attached.

On August 23, Dr. Sharrock visited and reviewed progress and interpretation of these sites.

Melrose Cemetery Site Project No. I-15-1(55)67
Arch. Survey no. 24BE1001

A crew of four spent about a half day examining the designated and immediately surrounding area.

Results: Surface finds were limited and widely scattered, suggesting, at most, transient occupation. No test pit deemed necessary.

Recommendation: Construction will probably not endanger prehistoric cultural materials at this site; no further action by the Archaeological Survey.

Divided Pond Site Project No. F-387
Arc. Survey no. 24BE1006

The designated area was examined by a crew of four.

Results: Surface finds were limited to one questionable flake along a roadway. No test pit deemed necessary.

Recommendation: Highway construction will probably not endanger prehistoric cultural materials; no further action by the Archaeological Survey.

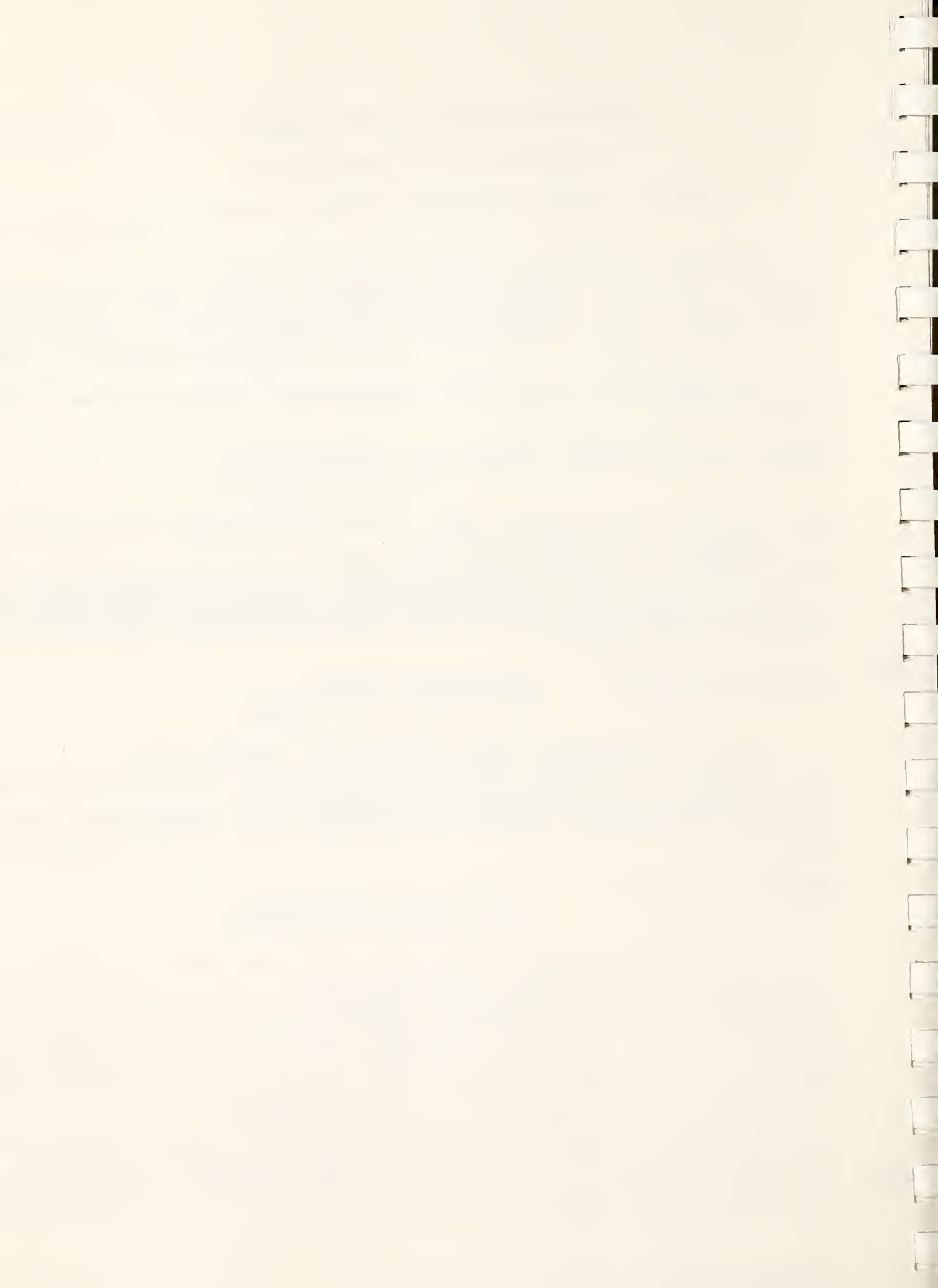
Dillon Quarry Site Project No. I-15-1(49)62
Arch. Survey No. 24BE1007

A crew of four devoted about two and a half days to completing investigation and to closing out this site.

Results: extensive surface examination and collection yielded some definite materials of human manufacture, and a large number which are questionable. Several test pits failed to show evidence of buried cultural materials. The site has been mapped and photographed. Further study of the collected materials will be completed in the archeology laboratory at the University of Montana, Missoula.

Results: This appears to be a quarry site rather than an area used for camping. Full interpretation awaits laboratory analysis.

Recommendation: In my estimation, the designated area warrants no further action by the survey; construction will apparently not endanger prehistoric cultural materials.



Clark Canyon Rock Shelters (no project number)
Arch. Survey no. 24BE1005

I-15-1 (36) 51 P.E.
PIPE ORGAN - NORTH

Testing here was limited to the smaller shelter (designated No. 2 on preliminary survey) which is on the right-of-way of the present highway. The status of shelter No. 1 pends right-of-way designation in this area.

A crew of four devoted about one and a half days to mapping, photographing, and excavating in this shelter; excavation was halted when, in my opinion, there was danger of undermining large boulders. Black-and-white Infra-red photographs were made in both shelters in the hope of bringing out faded pictographs and of distinguishing between prehistoric, early historic pictographs and latter-day graffiti.

Results: Cultural materials were confined to the top 12 inches of the deposit and included debris of "civilization", a rusted metal button of undetermined vintage, and obsidian flakes and chips. Although there was evidence of pack rat or other rodent disturbance of the largely windblown deposit, a sample of charcoal was collected, from a depth of 40 inches, for possible radiocarbon dating.

Recommendation: At present it is impossible to know the time of the fall of the large boulders which form the base of this shelter. Re: Shelter No. 1, an archaeologist should be present, if possible, if these boulders are ever moved; if they are relatively recent falls (say in the last 150-200 years) they may cover prehistoric cultural materials. At present, we have gathered all the available information. Re: Shelter No. 2, I would strongly recommend extensive testing and possible full-scale excavation. We found no evidence of "amateur" investigations here; therefore, it is possible that this shelter does contain cultural materials in and under the debris.

Note: We thank the Dillon Highway office personnel for highway warning signs used during the test. We observed, however, that about 9 of every 10 motorists ignored them completely!

On August 25, the crew returned to Missoula to deliver artifacts, film, and records.

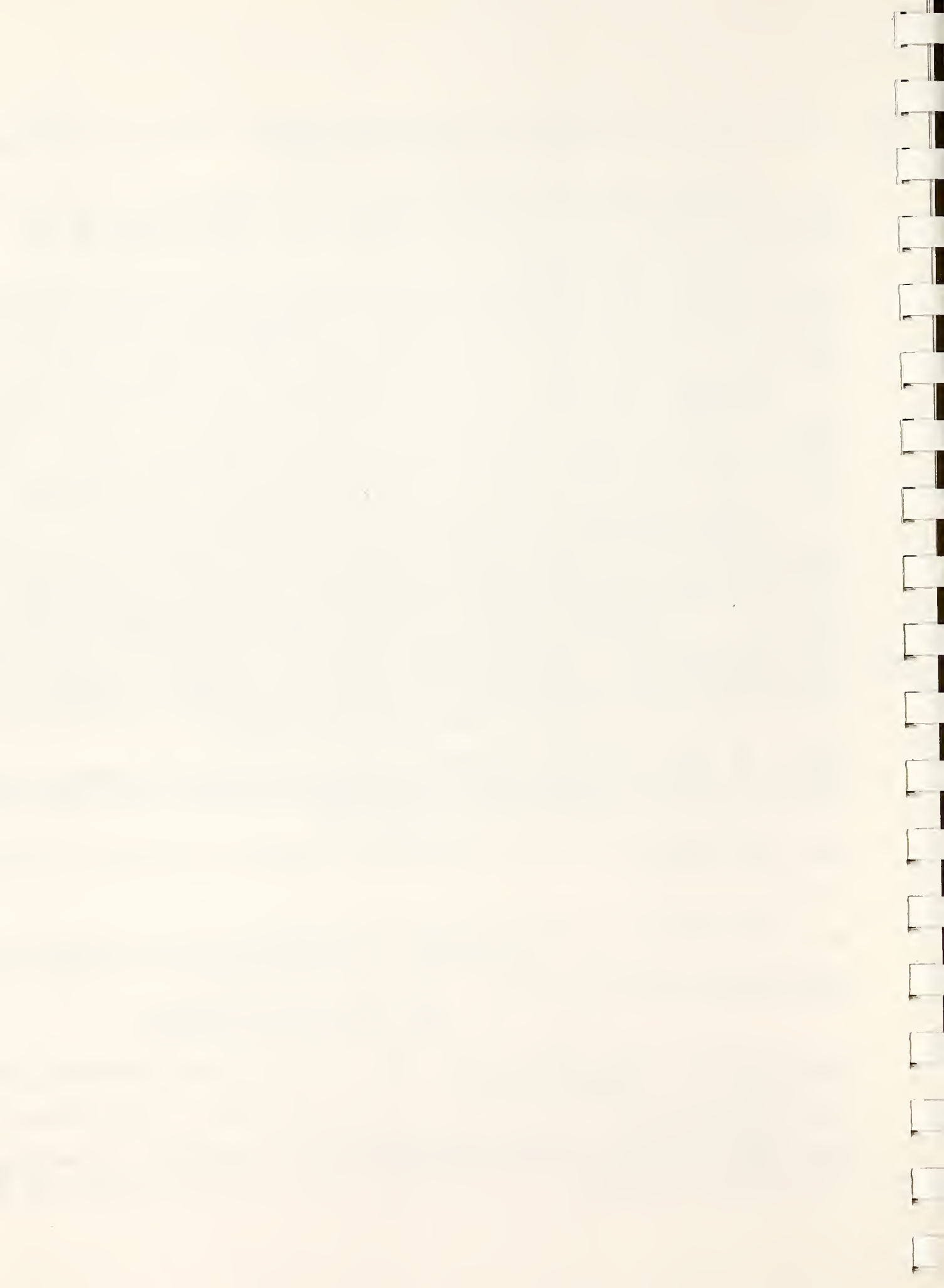
On August 27, a crew of three drove north to sites in Projects No. I-15-5(57)280 and I-15-8(28)343. We headquartered in Shelby, Mont.

Questionable County Line Site Proj. No. I-15-5(57)280
Arch. Survey No. 24CA1002

A crew of three spent about three hours carefully examining the designated and surrounding area.

Results: Surface finds were unremarkable, and a test pit was deemed unnecessary.

Recommendation: Highway construction will probably not endanger prehistoric materials in the designated area; no further action by the Archaeological Survey.



Toole-Pondera County County Line Site Project No. I-15-8(28)243
Arch. Survey No. 24TL1002

Highway survey is apparently not complete, as only a few stakes were found. A crew of three spend about three-fourths of a day examining this and all area which we thought might be within right-of-way boundaries.

Results: Although this appears to be a likely camping area, the surface materials were thinly scattered and inconclusive. No test pit.

Recommendation: In the designated area, construction will apparently not endanger cultural materials; no further action by the Archaeological Survey.

MONTANA HIGHWAY SALVAGE PROJECT

Preliminary Site Examination

Time and Mileage Summary--August 21 through August 31

Dillon Area (includes travel time)

Dillon Quarry Site--Project No. I-15-1(49)62

Supervisor 2½ days

3 Assist. 2½ days

Melrose Cemetery Site--Project I-15-1(55)67

Supervisor 1½ day

3 Assist. 1½ day

Clark Canyon Rock Shelters--(Pipe Organ Slide Area-No project No.)

Supervisor 1½ day

3 assist. 1½ day

Total Mileage 613

Shelby Area (including travel time)

Questionable County Line Site--Project I-15-5(57)280

Supervisor 3 hours

2 Assist. 3 hours

Toole-Pondera County Line Site--Project I-15-8(28)343

Supervisor ¾ day

2 assist ¾ day

Total Mileage 520

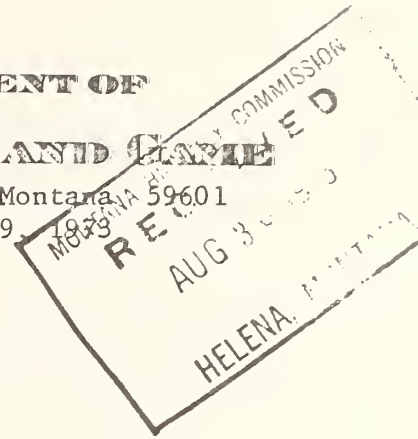
STATE OF MONTANA

DEPARTMENT OF

FISH AND GAME

Helena, Montana 59601

August 29, 1983



Mr. H. J. Anderson
Director of Highways
Department of Highways
Helena, Montana 59601

ATTN: Steve Kologi

Dear Mr. Anderson:

We have reviewed the draft environmental statement for Armstead N. & S. and Pipe Organ N. & S. The following are our comments on this statement:

On Page 2, we suggest that paragraph 2 should read as follows: "Some fish and fish food organisms will be affected by the construction. Timing of stream alterations will correspond to dates that will least affect trout reproduction. Procedures to meet pollution control requirements of the Montana Department of Highways Standard Specifications and the Montana State Department of Health and Environmental Sciences will be followed. Special contract provisions have been agreed on which will keep water pollution and its effects to a minimum." ①

Concerning the channel change mentioned on line 20, Page 12, we believe it would be helpful to more fully describe the extent of all channel changes individually and in more detail. Also, what were the criteria which required the final new channel change design? ②

Page 13. The statement in the last paragraph concerning crossing the main channel of the Beaverhead River five times before emerging from the canyon, indicates a lack of consideration for rivers and floodplains in the original route location.

Page 20, lines 8 through 10. The statement that "A channel change is necessary at the Red Rock River crossing" is not very informative. Is the channel change really necessary or actually just less expensive than a different bridge design or crossing location? A channel change may be less expensive but is more detrimental to habitat and environment than a different bridge design. ③

Page 20, line 11. Again, channel change is stated as being necessary. A relocation of the highway would alleviate the problem of channel change, and the effects on fish habitat. ④

Page 20, line 19. This statement should include ¹³⁰⁰at the ~~1500~~ c.f.s. profile following the words "Channel change." ⑤

Page 20, line 20. For clarification of meaning, the following should be added to the statement "This berm would allow a space for vegetation such as willows to grow, thus improving the fish habitat": over that which usually results when channels are changed. ⑥

Page 21, line 4 through 6. It should be stated that in order to maintain water quality in the Beaverhead River, the water will not be pumped into the river unless it meets the quality required by the State Department of Health and Environmental Sciences, and will not adversely affect the aquatic environment. Otherwise, the water should be pumped into a settling pond for treatment before discharge into the Beaverhead River. We believe a full and complete description of controls and procedure concerning key dewatering is appropriate at this point. ⑦

Page 22, line 11. The statement "The effect on the total fish population, however, should not be great: is speculative and has no basis at this time. If correct procedures are not followed, serious results could occur. Therefore, the statement should be omitted. ⑧

Page 23, line 9. Concerning the risk and expense of Alternate A, we believe that Alternate A would have been a better choice from the standpoint of adverse effect on productive floodplain and fish and wildlife resources. A statement to this effect should be added here, or in the Irreversible Commitment of Resources section. The total adverse effect by previous construction in this area has been severe. ⑨

Page 24, paragraph 3. Prior construction activities caused the Pipe Organ, Landslide, therefore, stabilization is not a benefit of the project, merely an attempt to correct a past "misfortune". Stabilization of the slide is, in fact, a separate project and not a benefit of this highway project. ⑩

The same comment is appropriate concerning the "benefit" of perpetuating the flow of the Beaverhead River. The flow of this river was "perpetual" before conditions which caused the slide were created. ⑪

Page 24, paragraph 4. We question that the new rest area should be listed as an environmental "benefit". This rest area will be built on the floodplain and will be cause to restrict the normal lateral movements of the stream. This can result in adverse effects to aquatic communities. In addition, very productive agricultural land is removed from production by location in this area. ⑫

We appreciate the opportunity to review and comment on this statement.

Sincerely,

Ralph W. Boland

RALPH W. BOLAND, ASSISTANT ADMINISTRATOR
ENVIRONMENT AND INFORMATION DIVISION

RWB:jd

cc: LeRoy Ellig

Attn: Bud Gaffney

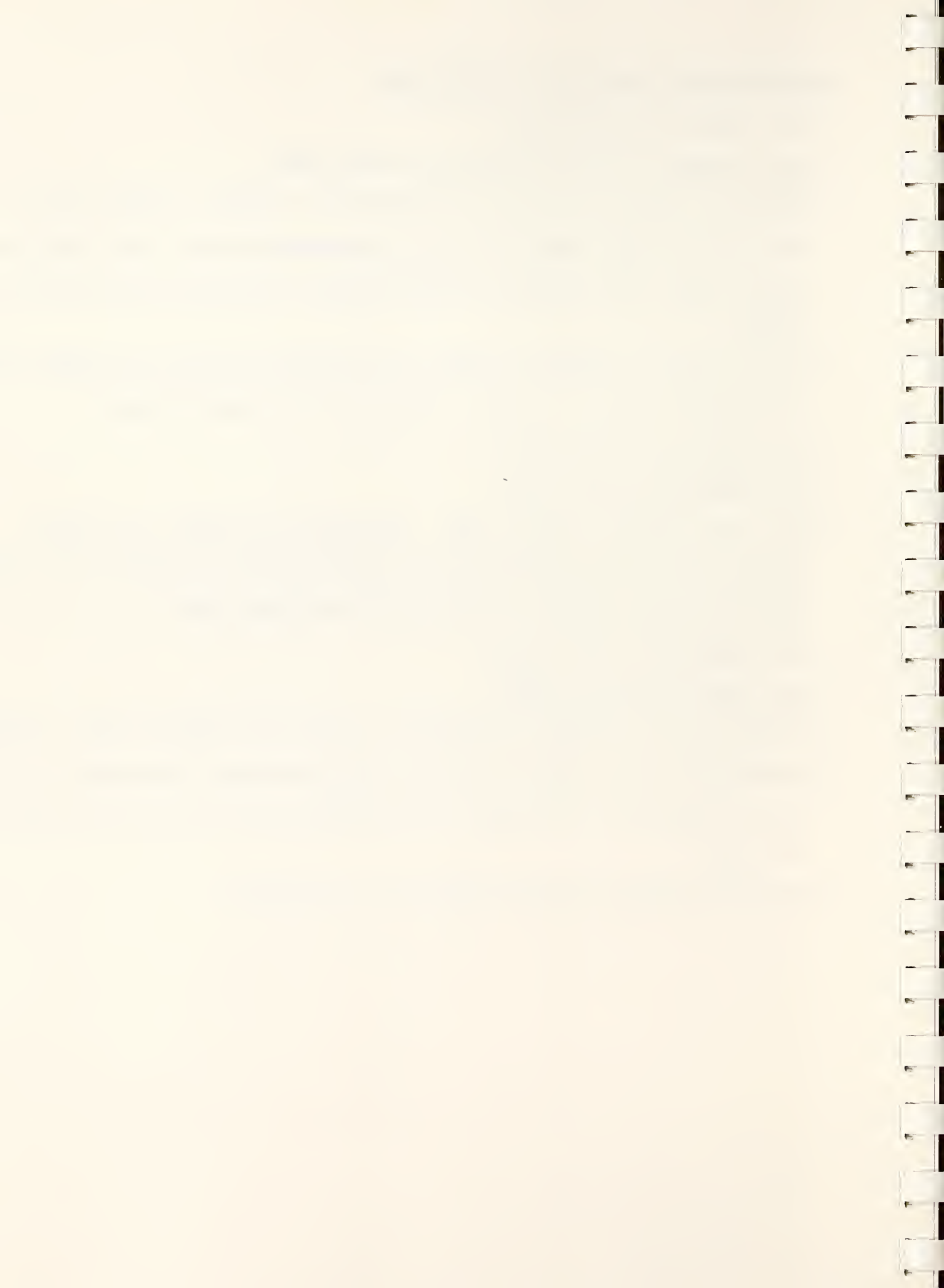
Norm Peterson

H. N. Stewart

Fletcher Newby

STATE OF MONTANA, DEPARTMENT OF FISH AND GAME

1. Your suggestion has been added.
2. This statement has been clarified in the final report.
3. Due to the skew of the river at the Red Rock River Crossing, a bridge spanning the river with no channel change would cost considerably more than a short bridge and a channel change. The location is limited because of the existing structures and highway.
4. Channel change is necessary to remove the constriction of the river, thereby helping to lessen the chances of flooding, and protect the railroad embankment.
5. Your suggestion has been added.
6. Your suggestion has been added.
7. Your first suggestion has been added. "Dewatering" is covered in the project special provisions. The contractor has a number of options by which he can accomplish dewatering; therefore, we cannot detail the exact method.
8. Your suggestion has been adopted.
9. Your suggestion has been added.
10. Stabilization of the Pipe Organ Slide is a part of this highway project. Although
11. stabilization is an attempt to correct a past misfortune, it definitely is a benefit at this point. If the area is not stabilized, the earth could slide damming the river.
12. This rest area has since been deleted from the planning.



STATE OF MONTANA



DEPARTMENT OF

FISH AND GAME

Helena, Montana

July 24, 1973

Mr. H. J. Anderson
Department of Highways
Helena, Montana 59601

Dear Mr. Anderson:

We have reviewed your Section 4(f) determination related to your Armstead - North and South Interstate Project as it passes the Beaverhead Area, Clark Canyon Reservoir.

The potential of this site for recreation in this area is very significant, having high use by not only the recreationist, but also by the highway user. The site as it exists does have its drawbacks. It is a narrow area with recently planted shrubs retarded from lack of water.

Your add two lane project will not only encroach on the recreational opportunities of the site, but also increase use and noise generated from the highway user.

We therefore firmly restate our stand for the Department of Highways to rectify damage done to the Beaverhead Area in accordance with the attached plan for the following reasons:

1. Re-direct interior circulation so that the smaller space is better used.
2. Provide buffer plantings to help isolate the highway from the recreation area.
3. Re-orient the recreation use near the highway to better handle the highway user.

Please contact us if you need any additional information or have any questions.

Sincerely,

Ashley C. Roberts, Administrator
Recreation and Parks Division

ACR:op
Encl.

cc: Dick Kennedy
Jim O'Shea

IX. MEMORANDUM OF UNDERSTANDING RELATIVE TO SECTION 4 (f) LAND

MEMORANDUM OF UNDERSTANDING By and
Between the State of Montana,
Fish and Game Commission, and State of
Montana, Department of Highways

WHEREAS, the proposed Armstead - North and South Interstate Project of the Montana Department of Highways will harm the existing Beaverhead Recreation Area, Clark Canyon Reservoir, a public recreational area managed by the Montana Fish and Game Commission, and

WHEREAS, Section 4(f) of the Department of Transportation Act of 1966 as amended (23 U.S.C. Sec. 13) requires the Secretary of Transportation not approve any such project unless such project includes all possible planning to minimize harm to such recreational area;

WHEREAS, the Montana Department of Highways and the Montana Fish and Game Commission are desirous of entering into a memorandum of understanding concerning the proper alleviation of harm to be done to the said Beaverhead Recreation Area,

NOW, THEREFORE, IT IS AGREED AS FOLLOWS:

1. The following items will be designed and constructed by the Department of Highways, their contractors or assignees. The completed plan for those items is to supersede the attached incomplete preliminary master site plan.

a. The main approach road to the campground which will commence at the existing roadway extending from the Interstate westerly across the dam (K line) approximately 100 feet west of the K-1 ramp (K line Station 4+50+ and terminate at the existing recreation loop road, approximately 100 feet left of the Interstate K-1 ramp Station 47+50+.

The construction at this southerly terminus is to reestablish traffic to the road serving the existing loop road and boat ramp area.

This main approach is to be built with a standard 24 foot gravel surface with two to three-foot shoulders, as per Department of Fish and Game Typical Road Standards for Park and Recreation Roads. This approach road is to be widened approximately 16 feet midway between the two termini to allow parking along the west side as an orientation area. Another widened area on the east side is to contain a short split alignment section and allow a vegetation island for screening a trailer sanitation station.

b. The Department of Highways is also to include the grading and gravel surfacing of the one-way and two-way interior circulation roads and the five parking spurs, as indicated on the master plan. This roadway commences at the main approach road approximately 125 feet left of K-1 ramp station 477+35₊ and extends westerly and northerly.

c. The grading and surfacing outlined in Items "a" and "b" above shall include all necessary drainage culverts and ditches in compliance with Department of Fish and Game requirements. This construction is also to include any conduits placed across these roadways to provide placement of electrical, sewer or water lines required in the overall development plan. Details of these items are to be furnished by the Department of Fish and Game as final plans are prepared under provision in item 2, below.

d. Establishment of necessary trees, shrubs and ground cover (topsoil and seeding) along the main approach road to provide a noise abatement barrier from the Interstate Highway.

2. The following items, enumerated under "a" through "e" are to be prepared in a separate set of plans and specifications suitable for calling of bids and letting of a contract. These plans and specifications are to be prepared by the Department of Highways through the cooperation of the Fish and Game. These items will be paid for by the Department of Highways.

The letting of this portion of the project is to coincide with the contract award of the main Interstate improvement.

a. Log and stone barriers along and through the main approach road and the interior circulation roads.

b. The proposed electrical requirements including extending single phase power into the site underground, miscellaneous wiring, electrical controls and equipment for water systems and service stations (if needed).

c. Water system to irrigate trees, shrubs, etc., provided in item d below. (Include pump, surge tank, water lines, drains, control valves, quick couplers, sprinkler heads and anti-siphon devices.)

d. Provide topsoiling and seeding of all areas disturbed by cut and fill construction resulting from the proposed road system.

e. Relocation of any existing traffic control devices, etc., which can be utilized in the new design.

3. The following items are to be furnished, installed and/or paid for by the Fish and Game Commission:

- a. Area orientation sign and other new interior signs.
- b. Miscellaneous items such as grills, trash cans and racks, picnic tables and trailer sanitation facilities.
- c. Any improvement, development or expansion of facilities not included in this agreement.
- d. All maintenance and operation cost of the new recreational facilities including all features constructed by the Department of Highways under this agreement.

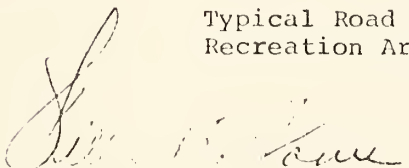
4. This agreement is to serve as a commitment by the Fish and Game Commission that the terms and conditions of this memorandum include all possible planning to minimize harm to the subject area resulting from the proposed highway construction. The Fish and Game Commission agrees to concur in the transfer of the necessary right-of-way by the Bureau of Reclamation from Fish and Game Commission jurisdiction to the Department of Highways jurisdiction. Temporary use of adjacent areas during construction will be permitted only to the extent that all necessary steps are taken to minimize adverse impact on those areas.

The full implementation of this memorandum is also contingent upon the acceptance by the Secretary of Transportation of the Final Environmental Impact Statement, satisfying the requirements of the 4(f) section of the Department of Transportation Act of 1966 (as amended).

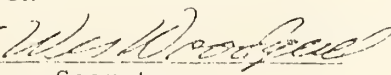
Attachments made a part of this agreement are as follows:

Incomplete Preliminary Master Site Plan,
Beaverhead Clark Canyon Recreation Area,
September, 1972

Typical Road Standards for Park and
Recreation Areas.

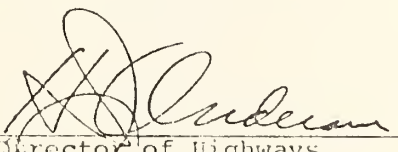


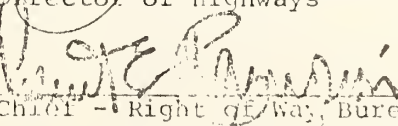
Chairman, Fish and Game
Commission

ATTEST: 

Secretary

Dated August 9, 1974



Director of Highways


Chief - Right of Way Bureau

Dated JUL 26 1974



Mar 18 51/2

STATE OF MONTANA
DEPARTMENT OF HIGHWAYS

39-JGS

08-30.22-A2

H.N. Stewart, Division Engineer
Federal Highway Administration

X. EXHIBITS



Photograph taken from top of dam looking southeast showing recreation area containing approximately 16.3 acres. This area contains 31 picnic tables out in the open, 18 picnic tables under wooden shades, 3 toilets, 3 water pumps and a boat ramp.



Photograph showing the temporary easement area required to construct the new access road to the recreation area;

EXHIBIT

CONST PERMIT		EASEMENT	
LEFT	RIGHT	LEFT	RIGHT

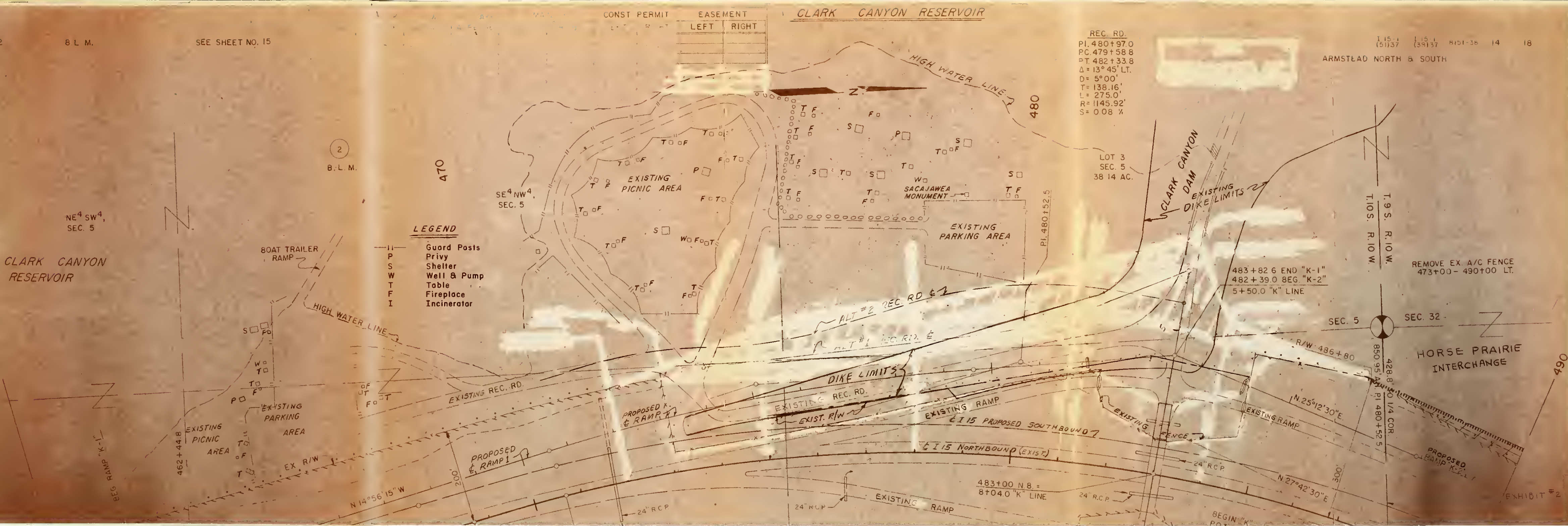
CLARK CANYON RESERVOIR

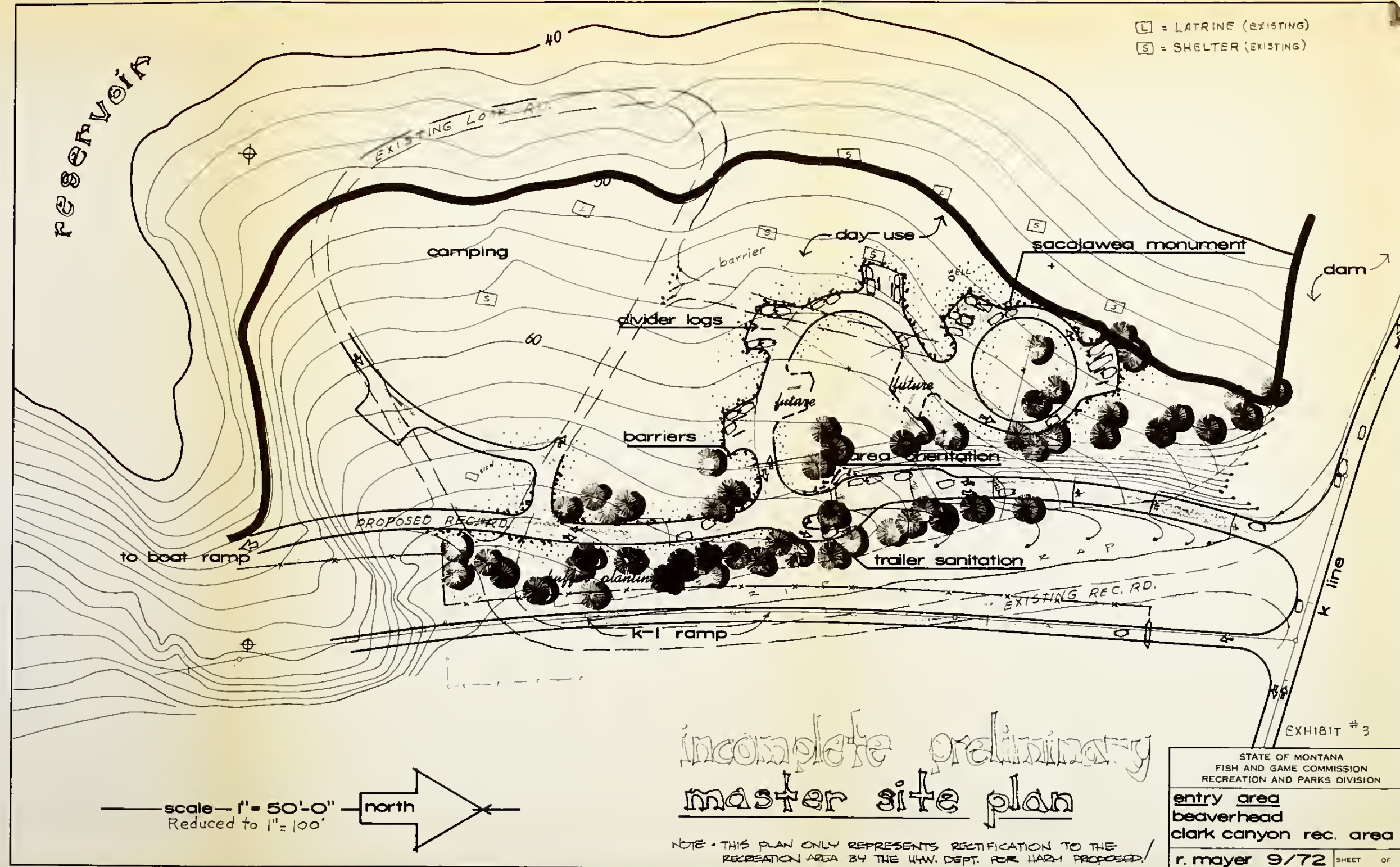
REC. RD.
PI. 480+97.0
PC. 479+58.8
PT. 482+33.8
 $\Delta = 13^\circ 45' \text{ LT.}$
 $D = 5^\circ 00'$
 $T = 138.16'$
 $L = 275.0'$
 $R = 1145.92'$
 $S = 0.08 \frac{1}{4}$

ARMSTEAD NORTH & SOUTH
T. 15 S. R. 10 W. 14 18
T. 15 S. R. 10 W. 14 18

CLARK CANYON RESERVOIR

- LEGEND
- Guard Posts
 - Privy
 - Shelter
 - Well & Pump
 - Table
 - Fireplace
 - Incinerator







MONTANA DEPARTMENT OF HIGHWAYS
ARMSTEAD N & S
I-15-1(32) 37
ENVIRONMENTAL REPORT

KRW #9061 SCALE 1" = 2000'





